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**SAROJ PANDEY**

## **Managing Quality Through Teacher Appraisal**

**CHANDRAKANT BHOGAYATA**

## **Taxonomies of Learning Strategies**

**SUNIL BEHARI MOHANTY**

## **Recent Developments in Teacher Education**

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## **Pharmaceutical Information Sources —A Review**

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Editor :  
SUTINDER SINGH

# Managing Quality Through Teacher Appraisal

Saroj Pandey\*

The educational system is currently undergoing reforms which are unprecedented both in pace and scope. The emphasis of all our educational endeavours has been slowly shifting from quantitative expansion *per se* to qualitative expansion of education at all levels. However, the quality of education and effectiveness of an educational institution is determined by the extent it has been able to achieve its goals and how closely it relates to the societal expectations. Clearly the role of teacher becomes crucial because he/she is the single most influential factor effecting the teaching-learning process in classroom. Recognising the importance of teachers, the Education Commission (1964-66) rightly remarked that 'no education system can rise above the level of its teachers'. More recently the International Commission on Education (1996) in its recommendations has mentioned that "The importance of the role of the teacher as an agent of change, promoting understanding and tolerance, has never been more obvious than today..." It has also emphasised the importance of teacher's role in improving the quality of education.

Therefore, the performance of teachers needs constant monitoring and evaluation for overall improvement in the system. Teacher appraisal thus is essential to maintain the quality of education provided at different levels of education. Recognising the need of teacher appraisal for quality improvement the National Policy on Education (1986) observed : "A comprehensive open, participatory and data based system of teacher evaluation will be established. It would include self-evaluation, evaluation by peers, and in appropriate cases evaluation by heads of institutions/departments and by students." It is felt that teacher appraisal followed by norms of accountability shall lead to overall improvement of teaching learning process and effectiveness of educational institutions.

The appraisal of teachers' professional performance is not something that is completely foreign to the educational system. The monitoring of professional standards, the remediation for those with low standards of practice and the possible advancement for those with higher standards of teaching are all procedures which have been followed by the local authorities in the past. What is new is, that, there exists a clean intention to formalise, systematise and concretize these already existing informal methods into a national system of performance appraisal and staff development of a formal variety. Such a system of appraisal may be helpful to :

- Provide opportunity for structured discussion on how organisational opportunities can best be pursued by all members of the educational organisation;
- Facilitate clarification and refinement of organisational goals in the light of constraints and opportunities;
- Encourage the institution in partnership with the teachers to look at individual performance to consider how and where performance can be developed and improved;
- Provide feedback in both directions, which is ritual to organisational and individual development;

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- Develop insight into the methods and approaches which may lead to better utilization of human and physical resources resulting in higher achievement among students and greater job satisfaction and motivation among teachers;
- Individual teachers to decide their course of action in such a way which contributes to organisational goals while satisfying their own individual goals;
- Provide necessary data for preparing a realistic Development Plan for the institution.

#### **Appraisal System : Current Status**

The existing appraisal scheme in India suffers from lack of criteria founded on profession-determined standards and research. Although teacher appraisal aims to promote professional development, it is not based on a clear articulation of what a teacher should know and be able to do. Another weakness of existing appraisal system is, that, though generally it is carried out by Inspectors of schools annually, these inspections are seldom conducted on a regular basis and with serious intentions. These inspections are more focused towards infrastructural facilities and fault finding rather than providing any corrective feedback to teachers. The Annual Confidential Report (ACR) of teachers is also used as a routine affair and is more impressionistic than realistic. Further, the highly secretive nature of ACRs fails to provide any feedback or motivation to teachers. The only exception to this generally prevailing scenario is negative remarks on ACR where the teacher is asked explanation before any disciplinary action is taken against him/her.

The Confidential Report System suffers from following drawbacks :

1. *Ambiguous and Ill-defined Criteria* : Most of the ACRs suffer from lack of clearly defined criteria of teachers' roles and responsibilities and standard of performance against which a teacher's performance can be evaluated. Neither they are balanced nor in conformity with objectives of various stages of education. Therefore, they fail to provide a reliable database for any teacher development programme.

2. *Superficial and Bureaucratic Treatment* : The seriousness with which these reports should be made by the reporting authority is almost missing in majority of cases and ACRs are filled as a routine affair both by teachers and the evaluating authority. The Principals of schools are mostly busy with handling other administrative problems and treat the appraisal work superficially since it is quite time consuming. Moreover the present system is highly closed and non-participative

which fulfils the bureaucratic requirements but does not provide necessary feedback regarding professional development needs of teachers.

3. *Subjectivity of Rating* : The existing teacher appraisal system is influenced by the interpersonal relations between the teacher (appraisee) and the evaluating authority (appraiser). A number of factors have been identified by behavioural scientists like Dayal (1976); Rao and Pareek (1978); Basu (1984) and De Cenzo and Robbins (1993) which may influence the behaviour of appraiser thereby impeding objective appraisal of teacher's performance. These are :

- *Leniency error* : Every appraiser has a notion of optimal standard of performance of teacher as a criteria against which he/she evaluates the performance of teachers. Therefore, the same teacher may be rated high or low by different appraisers due to subjectivity of rating. The former is referred to as positive leniency error and latter as negative leniency error. Appraiser with positive leniency error, therefore, tends to over-rate an individual's performance while appraiser with negative leniency error will tend to under-rate the same individual's performance. Hence unless there is some really objective criteria the subjectivity of opinion is bound to influence rating.
- *First impression* : It is said 'the first impression is the last impression' and the appraiser is often carried away by this proverb. The appraiser may like or dislike some specific quality of a teacher and may form an impression about the teacher quickly on the basis of this first impression which may not be true reflection of teacher's entire behaviour. Appraisal in this situation is bound to suffer from personal bias of appraiser.
- *Halo and horn error* : The impressionistic approach leads to halo or horn errors in appraisal. In halo error the entire appraisal is based on one perceived positive quality of an individual, while horn error is attributed to one negative quality or feature perceived, this results in overall low rating than may be warranted.
- *Stereotyping* : This refers to personal prejudice of appraiser against appraisee's caste, sex, religion, region, age, qualification etc which creates a standard mental picture about a person influencing his rating.
- *Central tendency* : There is generally a tendency among appraisers to rate most teachers as average or above average as it does not require any clarification or justification which is a must in case



a teacher's performance is rated very poor or outstanding.

- **Spillover and latest behaviour error** : Spillover error allows the past performance to influence the evaluation of present performance while reverse is true in case of latest behaviour error, where the appraiser is influenced by the recent behaviour of teacher ignoring the commonly demonstrated behaviour during the entire academic year.

It is clear that in most of the cases the appraiser's rating about teacher's performance is influenced by one factor or the other and is neither data based nor participatory as envisaged by the NPE (1986), with the result that it fails to improve the quality of teaching or quality of the institution. No wonder teachers are apprehensive about introduction of any teacher appraisal system and consider it an impingement on their right to make professional judgement about activities within the confines of the classroom. Another apprehension of teachers is the extent to which they would be placing themselves in a highly vulnerable position by indicating the areas in their professional life where they are experiencing difficulties or requiring help or further training. They feel that such information might prejudice their promotional prospects. It is also argued that teacher appraisal if not carried out impartially and properly will affect the self-esteem and morale of teachers and the overall quality of the institution in the long run.

To overcome the suspicions and concerns, any teacher appraisal process needs to be introduced in the education system carefully and effectively taking teachers into confidence. This is possible only when a transparent, databased and participatory appraisal scheme based on predetermined criteria for appraisal is evolved and implemented.

### Criteria for Teacher Appraisal

An effective system of appraisal should be based on the objectives of the organisation. Therefore, appraisal of teachers should be tailored according to the goals of various stages of education. Clearly a teacher appraisal scheme for elementary teachers should be evolved according to the objectives of education at the elementary stage and so on. The teacher appraisal scheme should be evolved keeping in mind three basic criteria :

- Clear articulation of what a teacher should know and be able to do.
- It should be related to teachers' career structure, i.e. it should be conceived as part of a long-term process, one designed to assist teachers to progress

through career stages based on attaining professional standards.

- It should not be individualistic in nature rather it should aim at developing a professional community in educational institutions.

The following criteria is proposed for appraising teachers' performance and effectiveness :

- i) Teacher's knowledge of subject matter and relevant transactional methodology. For example, use of activity based and joyful teaching-learning strategies.
- ii) Quality of teaching i.e. whether the teacher is able to use effective strategies and techniques of teaching at that particular stage.
- iii) Communication skill and rapport with students i.e. whether the teacher is able to relate to students at their developmental level.
- iv) Workload of teacher both academic and administrative.
- v) Scholarly activities and creativity encouraged among students.
- vi) Preparation and use of instructional material other than textbook in teaching.
- vii) Assessment of the progress and growth of students through continuous comprehensive evaluation.
- viii) Urge and opportunities for professional development through participation in orientation programmes, seminars, training workshops etc.
- ix) Rapport of teacher with higher authorities, colleague and parents.
- x) Students' attainment in curricular and co-curricular areas.

### Proposed System

In order to remove the apprehensions expressed about the utility and effectiveness of teacher appraisal a new method of teacher appraisal is proposed (Figure 1) which caters to the developmental needs of teachers, and is more transparent, databased, and participatory than the existing process.

It is obvious from the proposed format that a participatory appraisal system shall comprise of three sections : Section 1 to be filled by the teacher being appraised in which he/she describes his/her own achievements and difficulties encountered during the review period. This type of self-appraisal is currently being practised in many institutions. However, the existing self-appraisal proformas, generally, do not

have any provision for stating individual's aspirations and developmental needs which is included in the proposed format. It may help in identifying training needs of individual teachers and organise training programmes in a more meaningful and effective manner.

Section 2 of the proposed format may be filled by the reviewing authority who reviews the performance of individual teachers. This section reviews the individual teacher's performance during the year, his/her achievements and areas of weaknesses where further improvement is required. The reviewing authority may also give his/her comments on the developmental needs of individual teachers indicated in previous section.

Section 3 of the proposed format is crucial and a new addition to the existing system of teacher appraisal. As indicated earlier the appraisal interview holds a key position in transparent and databased system of teacher appraisal. The appraisal interview may be held annually and include the teacher being reviewed, the reviewing authority i.e. the principal and/or education officer. The interview should review the performance of teacher during the review period, discuss his needs and decide career path for the teacher during the coming session. Decisions regarding future training may also be taken in this interview meeting. The progress of teacher in the next year should be reviewed on the basis of these agreed upon objectives.

It is obvious from the aforesaid format that to be

effective appraisal should be a participatory process with clearly defined developmental career path for teachers developed mutually by the appraiser and appraisee. It should be transparent and teachers should be kept informed about their evaluation. Their performance should be evaluated against the criteria and standards of performance fixed for them through this career path at the end of each session to highlight their achievements and identify the weaknesses where training is required. It will help in improving the quality of teaching and accountability of teachers thereby improving the quality of the institution in the long run.

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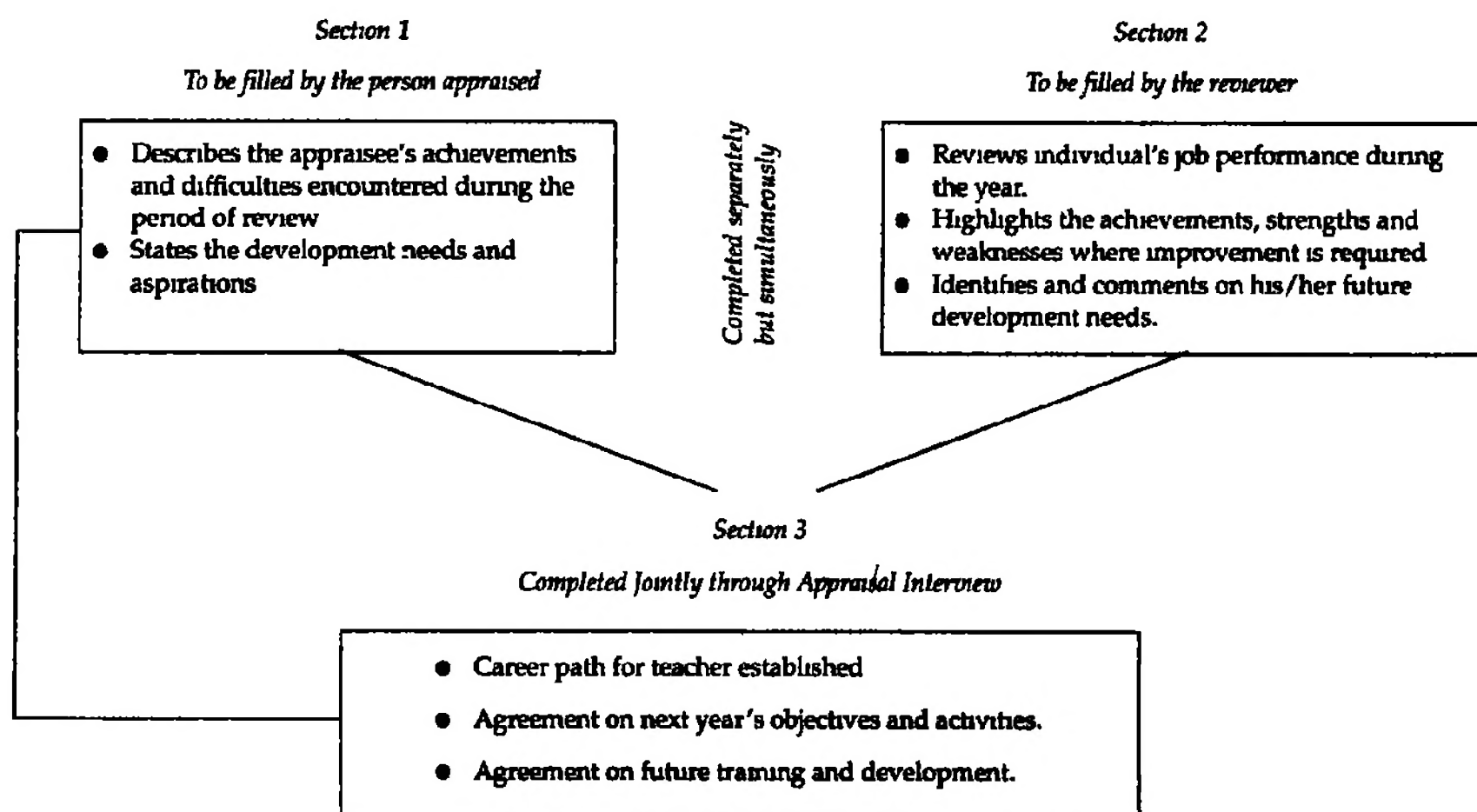


Figure 1 : Proposed Participatory Teacher Appraisal Process

# Taxonomies of Learning Strategies

Chandrakant Bhogayata\*

Although recently some philosophers have criticized the idea of instruction for learning to learn (Ormell, 1997), according to several scholars, learning is a treasure within (JALAE, 1996). Through the ages, educationists in the East as well as in the West have demonstrated the importance of self-learning or self-instruction. There is empirical and theoretical evidence to support the conclusion that improvement of learning ability is an important and viable educational goal. Modern advances of computerized telecommunication technology such as INTERNET have made self-learning necessary and possible. Instruction for learning to learn or instruction for learning strategies is a great challenge.

## Concept of Learning Strategy

Study skills, learning skills, self-learning skills, self-instruction skills, learning strategies, learning tactics, learning abilities, skills of academic intelligence, cognitive and affective learning strategies, strategies for self-regulated learning, metacognitive strategies, metastrategies, meta-learning skills — these are the different terms used for the concept of learning strategies (see Derry & Murphy, 1986; Gallini et al., 1993; Gibbs, 1981; Jonassen, 1985; O'Neil & Spielberger, 1979; Purdie & Hattie, 1996; Weinstein, Goetz, & Alexander, 1988; Zimmerman & Risemberg, 1997).

As a result of advances in cognitive psychology, we now make an entirely different set of assumptions about how learners process information. According to generative hypothesis (Wittrock cited in Jonassen, 1985), learners are actively engaged in constructing or generating meaning from material. Essentially, comprehension of text or any media requires attending to incoming stimuli, accessing existing knowledge to relate it, abstracting new knowledge structures and finally encoding those into memory. Meaning is generated by the learner, not controlled by the technology or its designer. Which technology of instruction is used matters little. What does matter is how the learner is processing the message and that depends on individual construction of knowledge (Jonassen, 1985). This is the cognitive psychological and constructivistic context and rationale of learning strategies.

Learning strategies are mental operations or procedures that students may use to acquire, retain, and retrieve different kinds of knowledge and performance. They enable learners to organize, integrate, and store information in memory, study learning materials, ar-

range study process and environment, or understand what or how well they have learned (Jonassen, 1985).

Learning strategies lie within the domain of "cognitive strategies" (Gagne, 1985), a term used to describe a broader family of intellectual capabilities that enables individuals to exercise executive control over how they think in problem-solving situations. When the problem is how to learn something, the individual accesses previously acquired attitudes, ideas, and skills that underlie study behaviour, and uses these to construct a learning strategy (Derry & Murphy, 1986). Recently, in a meta-analysis, based on 270 effect sizes from 51 studies; Hattie, Biggs, and Purdie (1996) concluded that interventions for learning strategies had produced an average effect size of 0.45.

## Taxonomies of Learning Strategies

What are the components of learning ability? How should the domain of academic intelligence be conceptualized and decomposed? Which learning strategies can be taught? These are the important questions to be addressed for research and instruction of learning strategies. A taxonomy of learning strategies is necessary for research and instruction.

Although unfortunately, an empirically derived taxonomy of learning strategies does not exist, many researchers and educators base their work on curriculum taxonomies that represent an attempt to delineate both the macro- and metacomponents of learning. These taxonomies have been modified over the years as a result of experience and research, and hence have acquired a significant measure of empirical and face validity. Taxonomies of learning strategies overlap one another substantially (Derry & Murphy, 1986).

Some major and representative classes of learning strategies are briefly reviewed in the following sections :

### *Dansereau et al.'s taxonomy*

This set (cited in O'Neil & Spielberger, 1979) can be divided into primary and supportive strategies. The comprehension-retention and retrieval-utilization strategies are primary ones. They include understanding, recalling, digesting, detailing, expanding, and reviewing. Goal-setting and scheduling, concentration management (mood setting and mood maintaining), and monitoring and diagnosing strategies are supportive ones. These cognitive and affective strategies are subsumed under the acronym MURDER.

### *Weinstein and Underwood's taxonomy*

Weinstein and Underwood (cited in Jonassen, 1985) list four major classes of strategies : information processing, study, support, and metacognitive. Infor-

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mation processing strategies are designed to make any information more meaningful and therefore more memorable. They include developing readiness, reading/viewing for meaning, recalling material, integrating it with prior knowledge, expanding or elaborating it, and finally reviewing what has been learned. Inserting questions, asking learners to generate questions and paraphrasing are the strategies for integrating material. Organizational strategies may include outlining and mapping. Elaboration strategies include creating mental images and analogies. Encoding strategies include mnemonics and imagery. Higher achieving students are effective learners because they know what they know and do not know. This monitoring of comprehension is referred to as metacognition. Such strategies are designed to improve self-control and self-regulation of learning process.

#### *Jones's taxonomy*

Jones's taxonomy (cited in Derry & Murphy, 1986) identifies three types of text-processing strategies: (1) encoding strategies for explicit text (naming, rehearsing); (2) generative strategies for implicit text (paraphrasing, visualizing, elaborating with analogies, inferencing, and summarizing); and (3) constructive strategies for inadequate text conditions (reasoning, transformation, and synthesis).

#### *Derry and Murphy's taxonomy*

Derry and Murphy (1986) presented an integrated taxonomy. The major categories in their taxonomy are (a) memory strategies for items, lists, and foreign vocabulary; (b) reading/study strategies for specific types of school text; (c) problem-solving skills applicable to arithmetic domain; and (d) affective support strategies for all domains.

#### *Purdie and Hattie's taxonomy*

Purdie and Hattie (1996) studied the cultural difference in the use of strategies for self-regulated learning. A social cognitive perspective on self-regulated learning perceives students to be self-regulated learners to the extent that they are "metacognitively, motivationally, and behaviourally active participants in their own learning process". The 14 self-regulated learning strategies are self-evaluation, organization and transformation, goal setting and planning, information seeking, record keeping and self-monitoring, environmental structuring, giving self-consequences, rehearsing and memorizing, seeking social assistance (from peers, teachers, or other adults), and reviewing (notes, books, or tests). These strategies are thought to represent the range of behaviours that students engage in to regulate their (a) personal functioning, (b) academic behavioural performance, and (c) learning environments.

#### *Zimmerman and Risemberger's taxonomy*

Recently Zimmerman and Risemberger (1997) presented a taxonomy of triadic self-regulatory strategies

for writing from social cognitive perspective. There are 10 processes or strategies under three major categories: (a) environmental processes (environmental structuring, self-selected models); (b) behavioural processes (self-monitoring, self-consequences, self-verbalization; and (c) personal (covert) processes (time planning and management, goal setting, self-evaluative standards, cognitive strategies for organizing, producing, and transforming written text, and mental imagery).

#### **Concluding Remarks**

During this era of cyberspace and microcomputers, learning strategies have become essential to success in not only school but also in the personal and professional world beyond.

Over the past 25 years, literally hundreds of studies and reviews have investigated the utility of training students to use learning strategies.

In recent years, several well-elaborated theoretical perspectives have emerged that collectively provide excellent guidance for the design of instructional systems that should accomplish the goal of training students' learning ability. Three of these are Sternberg's guidelines for intelligence training, Gagne's theory of learning and instruction, and metacognitive theory (Derry & Murphy, 1986).

Shall we, teachers, take the challenge of actualizing our Rigvedic Mantra *Suadhyayat Ma Pramadaha* by preparing students for implementing learning strategies in our tomorrow's institutions of higher learning?

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# Recent Developments in Teacher Education

Sunil Behari Mohanty\*

After 1986, there have been many developments in teacher education. Important developments are IASE, CTE, DIET, DRU and BRU. In 1987-88, a central government sponsored scheme of Teacher Education was approved. This Scheme had five aspects : (a) To orient 5 lakh teachers every year, in 10 days camps (started from 1986) to increase their motivation and competence for implementation of new policy, (b) To set up 50 Institutes of Advanced Study and 200 Colleges of Teacher Education, (c) To set up 400 District Institutes of Education and Training, (d) To strengthen SCERTs, and (e) To establish and strengthen University Departments of Education (by UGC).

## Institutes of Advance Study in Education (IASE)

In 1987-88, the central government initiated the scheme of IASE as part of its efforts to improve quality of teacher education. The scheme aims at improvement of quality of teachers through establishment of research institutions in Education subject. Earlier, the UGC had established one Center of Advanced Study in Education at M.S. University of Baroda and two departments of Special Assistance at Indore and Kurukshetra. The IASEs are meant to supplement efforts of these institutions. The central government seeks proposals from the state government. Each proposal is evaluated by experts. On the basis of the recommendations of the experts, IASEs are approved. The state governments undertake to continue the new posts created under this scheme, after the period of assistance is over. Each IASE gets following types of assistance. The non-recurring expenditure of 60 lakh includes : (a) Institute building-10 lakh, (b) Hostel-25 lakh, (c) Staff quarters-10 lakh, and (d) Furniture, equipment and library books-15 lakh. The recurring expenditure per annum includes : (a) New/upgradation of posts 6.7 lakh, (b) In-service Education and Extension programme-3.75 lakh, and (c) Research projects-2.0 lakh.

## Areas of Academic Responsibility

The IASE has following five areas of academic responsibility : (a) Foundations of Education — B.Ed.,

M.Ed., M.Phil and Ph.D, (b) Pedagogy & Methodology — Development of models, (c) Educational Technology — Development of teaching aids, (d) In-Service Education and Extension, and (e) Special programmes in thrust areas — Elementary Education, Adult Education & Non-formal Education, Special Education, Planning and Management etc.

## Activities

An IASE has following activities :

1. Conducting, B.Ed, M.Ed, M.Phil & Ph.D. (Education) programmes.
2. Organising in-service courses for secondary school teachers and teachers of higher secondary stage : (a) Subject oriented courses for 3-4 weeks duration, (b) Theme specific courses for 3-10 days duration; and (c) Longer duration courses in special areas.
3. Providing extension and resource support to secondary schools, school complexes and individual teachers.
4. Conducting experimentation and innovation in school education.
5. Providing training and resource support for the new areas of educational concern — value oriented education, work experience etc.
6. Providing support to professional bodies.
7. Encouraging community participation in teacher education.
8. Conducting training programmes for elementary and secondary teacher educators, school heads and supervisors etc.
9. Organising pilot programmes, if possible.
10. Organising longer duration courses, after getting stabilised.
11. Organising pilot programmes in teacher education.
12. Conducting research in education.
13. Organising programmes for development of softwares on educational technology.
14. Providing academic guidance to DIETs and resource support to CTEs and training colleges.

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15. Developing instructional materials — (a) unit plans, (b) question banks, (c) teacher's handbooks, (d) source books and resource materials, (e) self-learning packages and (f) teaching aids and kits.

#### *Suggested Faculty Staffing Pattern, Student Strength and Working Days*

Central government has suggested following staffing pattern for IASEs : (a) Principal-1, (b) Professors-2 (Foundation of Education-1 and Method subject-1), (c) Readers-6 (Elementary Education-1, In-Service Education & Extension Services-1, Educational Planning & Management/Administration-1, and School Subjects-3 (at least one to be in Science) and Lecturers-18 (Foundations of Education-2, Elementary Education-1, In-service Education and Extension Services-1, Educational Technology-1, Adult/Non-formal Education-1, Special Education-1 and School Education-11). Other Staff members include Librarian-1, Physical Education Instructor-1, Technicians/Instructors-4-5, Lab. Asstts., Clerical & Class IV Staff-as required. Suggested student strength for B.Ed. Courses is 100 and for B.Ed. (Elementary Education)-20-30. Each IASE has to be non vocational so that in-service programmes can be carried out throughout the year.

#### *Norms for Upgrading a Teacher Education College into IASE*

The norms for upgrading a teacher education college into IASE include (a) Age — More than 7 years, (b) Courses offered — B.Ed. & M.Ed, (c) Intake of students — B.Ed. : 100 and M.Ed. : 10, (d) Academic Staff : (i) At least 14, out of which 3 or 4 must have research qualifications, (ii) Lecturer/Instructor in Physical Education/Art/Music/Work experience, (iii) One Librarian, (e) Teacher pupil ratio-1:10, (f) Campus land area — 7 acres, (g) Accommodation — 1 lecture hall, 5 lecture rooms and 1 room each for staff, girls, boys, Art/Craft/A.V, (h) Laboratories — 3 one each for Physical Science, Biological Science and Psychology, (i) Library — Reading room for 50 students, 8000 books and 12 journals out of which 5 professional journals, (j) Hostel — accommodation for 2/3 of students' strength, (k) Practical teaching-one school, (l) Finance-adequate, (m) Management — sound, and (n) Research & Innovation — Evidence of institutional and individual research.

#### *Suggested Material Resources*

Besides lecture hall, there should be 3 lecture rooms and 1 room each for In-service Education, Seminar, Audio-Visual aids, Art, Craft, Science, Psy-

chology and Educational Technology. Library should have at least 20,000 books, 15 professional journals and a reading room for 50 students. Hostel should have facilities for 175 inmates. There should be 10 computers and allied audio-visual equipments including 2 sets each of VCR & colour T.V. units, two-in-one audio sets, slide projectors, and overhead projector and 1 amplifier set and allied accessories including video cassettes etc.

#### *Programme Advisory Committee*

Every IASE should have a Programme Advisory Committee (PAC) consisting of the following members: The Principal shall be the convener. Other members to include (a) Representative of the Education Faculty of the concerned University, (b) Representative of SCERT, (c) Representative SIET, (d) Representative of Regional Institute of Education, (e) Divisional Officer of Education Dept., (f) Representatives of local radio/TV stations, (g) Principals of DIETs covered, (h) heads of two secondary schools of the area served, (i) One or two students, (j) Two teachers, (k) One research scholar of the institution, (l) One professor/reader, (m) One lecturer, (n) Two eminent educationists, (o) One or two representatives from NGIs, (p) One representative from Dist./Divn. level Adult Educations office. The Programme Advisory Committee should meet at least twice a year. The PAC may set up programme co-ordination sub-committees.

There are 34 IASEs. The distribution of IASEs among states is : Andhra Pradesh (10), Delhi (2), Gujarat (2), Karnataka (1), Madhya Pradesh (3), Maharashtra (1), Orissa (3), Punjab (1), Rajasthan (4), Tamil Nadu (2), Uttar Pradesh (2), and West Bengal (2).

#### *Colleges of Teacher Education*

Colleges of Teacher Education are good teacher training colleges which provide at least B.Ed course, organise in-service programmes and have adequate human and material resources. The central government seeks proposals from the state governments for providing assistance for certain training colleges for the purpose. The proposals are evaluated and decisions are taken on the basis of evaluation study team reports. A College of Teacher Education receives following types of assistance from the central government. The non recurring expenditure-38 lakh includes (a) Institute building-8 lakh, (b) Hostel (for 150 inmates)-23 lakh, and (c) Staff quarters-7 lakh. The recurring expenditure per annum includes (a) New posts/upgradation of posts-2.7 lakh, (b) In-service education and extension-2.75 lakh, and (c) Research projects-8 lakh.

### *Areas of Academic Responsibility*

A College of Teacher Education (CTE) has following six areas of academic responsibility : (a) Foundations of Education — B.Ed. programme, (b) Pedagogy and Methodology, (c) Educational Technology & Media Resources — Development of teaching aids, (d) In-service Education and Extension, (e) Special Programmes in new areas such as Environmental education, Population education, Vocational education, and (f) Computer education & services etc.

### *Activities*

CTE has following activities :

1. Organising B.Ed programme.
2. Organising in-service courses for secondary school teachers —
  - (a) Subject oriented courses for 3-4 weeks duration :
  - (b) Theme specific courses for 3-10 days duration.
3. Providing extension and resource support to secondary schools, school complexes and individual teachers.
4. Conducting experimentation and innovation in school education.
5. Providing training and resource support for the areas of educational concern such as value-oriented education, work experience etc.
6. Providing support to professional bodies.
7. Encouraging community participation in teacher education

### *Programme Advisory Committee*

In order to plan programmes, every CTE should have an Advisory Committee. The Committee has the Principal of the college as convener. Other members include (a) One representative of Education Faculty of University, (b) One representative of SCERT, (c) One representative of SIET, (d) One District Level Education Officer, (e) One representative from local TV/radio station, (f) Principals of the DIETs covered, (g) Principals of two secondary schools, (h) One or two student representatives, (i) Two teachers, (j) Two faculty members — one reader and one lecturer, (k) Two eminent educationists, and (l) One or two representatives of NGOs in education field.

### *Suggested Staffing Pattern and Student Strength*

The suggested staffing pattern includes : (a) Prin-

cipal-1, (b) Readers-3 — Foundations of Education-1, In-service Education and Extension service-1, and School subject-1, and (c) Lecturers-13 — Foundations of Education-1, Educational Technology-1 and School Subject-1. Other staff members include (a) Librarian-1, (b) Physical Education Instructor-1, (c) Technicians/Instructors-3-4, (d) Lab. Asstts-2, and (e) Clerical & Class IV staff-as required. Suggested student strength for B.Ed. is 100.

### *Suggested Material Resources*

Besides lecture hall, there should be 5 lecture rooms and one room each for In-Service Education, Seminar, Audio Visual Aids, Art/Craft, Science, Psychology and Educational Technology. Library should have at least 10,000 books and 10 professional journals and reading room for 50 students. Hostel should have facilities for 150 inmates. There should be 10 computers and allied A.V. equipment including two sets each of VCP and Colour TV units, two-in-one audio sets, slide projectors, and overhead projector and one amplifier set and allied accessories.

### *Norms for Selection of a Training College for Upgradation into CTE*

The norms for selection of a training college for upgradation into a College of Teacher Education include (a) Age-at least 5 years, (b) Courses offered — B.Ed/L.T, (c) Intake-100, (d) Academic Staff — (i) At least 10 (full time and qualified for different school subjects) and (ii) Lecturer/Instructor in Phy. Edn./Art/Music/Work experience, (e) Teacher pupil ratio — 1:10, (f) Campus land area — 5 acres, (g) Accommodation facilities : Lecture Hall-1, Lecture rooms-3, 1 room each for Staff, Girls, Boys, Art/Craft, Audio Visual, Science and Psychology, (h) Laboratories — Science and Psychology (i) Library — Reading room for 30 students; 4,000 books, 10 journals out of which 3 to be professional journals, (j) Hostel-Accommodation for one-half of the total number of students, (k) Practice teaching school — 1 and, (l) Financial position — Adequate.

There are 86 CTEs in the country. These are distributed as Andhra Pradesh (3), Assam (10), Bihar (3), Gujarat (5), Himachal Pradesh (1), Karnatak (10), Kerala (3), Madhya Pradesh (7), Maharashtra (4), Rajasthan (6), Tamil Nadu (5), Tripura (1), Uttar Pradesh (15) and West Bangal (1).

### *District Institutes of Education & Training*

The guidelines for District Institutes of Education and Training, developed by the Department of Education of the Ministry of Human Resource Development of the Central Government mentions Mis-



sion of the DIET as "To provide academic and resource support at the grassroots level for the success of various strategies and programmes being undertaken in the areas of elementary and adult education. It has to give support to Universalisation of Primary Education (UPE) and National Literacy Mission (NLM) targets". The scheme was initiated in 1987-88 with the target of establishing 400 DIETs.

### *Functions*

Each DIET should perform pace setting role. The DIET has three main functions : (a) Training-pre-service and in-service, (b) Resource support, and (c) Action research

### *Autonomy and Working Days*

In order to function effectively, each DIET needs to have functional autonomy — academic, administrative and financial. The DIETs should be answerable to the concerned District Boards of Education. Acharya Ramamurti Report (1990) and Reddy Report (1992) recommended autonomy for DIETs. Each DIET should be non vocational and mainly residential for pre-service programmes.

### *Linkage with others*

The DIET needs to have linkage with organisations and institutions involved in elementary, non-formal and adult education programmes such as NGOs, DRDA, local radio/TV stations, University Departments of Education, IASE, DRDA, etc

### *Branches*

Every DIET has following seven branches : (a) Pre-Service Teacher Education (PST), (b) In-service programmes, Field Interaction and Innovation Coordination (IFIC), (c) Curriculum Material Development and Evaluation (CMDE), (d) Educational Technology, (e) Planning & Management, (f) Work Experience. A few DIETs have District Resource Unit for Adult and Non-Formal Education (DRU).

### *Recruitment Policy for Faculty*

The central government has suggested qualifications and experience for recruitment of DIET faculty. Every DIET faculty is required to have continued school teaching experience. These are as follows The Principal has to be M.A./M.Sc. and M.Ed/B.Ed having essential experience of (a) 10 years with at least experience of 3 years in elementary education and (i) teaching in a school (preferably elementary school); (ii) teaching in a teacher training institution; (iii) educational administration OR (b) 3 years of elementary stage out of (i) 7 years of school teaching

(ii) 3 years of educational administration, OR (c) (i) 7 years of educational administration (ii) 3 years of school teaching/teacher training (preferably elementary stage). There should be excellent record of service, record of successful leadership and record of educational innovation. The desirable experience includes (a) 1-3 years of providing technical resource support for elementary stage, and (b) Work in area of education of disadvantaged.

A Senior Lecturer for pre-service teacher education should be M.A./M.Sc. & M.Ed. or M.A. (Psy) and B.Ed/C.T and should have 2 years minimum teaching out of 5 years in school/teacher education institutions including 3 years at elementary stage. A lecturer in Foundations of Education has to be M.A./M.Sc. & M.Ed. or M.A. (Edn) and B.Ed and to have minimum experience of 3 years of teaching in school/teacher education institution (elementary). A lecturer in School Subjects (General) has to be M.A./M.Sc. and B.Ed and to have minimum experience of 3 years at elementary school/teacher education institution. The Senior lecturers & lecturers in-service education and curriculum and evaluation have to be M.A./M.Sc. and M.Ed or B.Ed/C.T. and DDE and to have experience of (i) 3 years of teaching, (ii) In-service education/Distance education, and (iii) Record of educational innovation. A senior lecturer in Educational Technology has to be B.A /B.Sc and M.Ed/B.Ed/C.T./DDE and to have (i) 3 years of teaching, and (ii) 5 years of AV production experience. A senior lecturer in Planning and Management has to be M.A Eco/Stat/Pub. Admn.) and M Ed. (Pln./Admn) or M.A (Ednal Plang./Admn) or M.A. (Eco./Stat./Public Admn.) and to have 6 years in school/planning (3 years in Educational Planning/Admn.) experience. A lecturer in the same department has to have above qualifications and experience of 4 years in schools/SIETs. (2 years in Ednal. Planning/Admn.) or 3 years in Planning Admn. In case of work experience, the senior lecturer and lecturer has to have M.A./M.Sc./M.Com & B.Ed./C.T. or M.A. (Edn.)/Comm./Voc. Edn.) or Bachelor's Degree in Agr/Forestry) or Diploma in Engineering, qualifications and nearly 3 years of experience as given above.

### *District Resource Unit (DRU)*

District Resource Unit is meant for Adult Education (AE) and Non-formal Education (NFE). The DRU may cover both the areas or one area. The DRU may be attached to DIETs or attached to other institutions or non-government organisations. As per the guidelines for DIETs developed by central government, the DRU has following objectives :

1. To assist educational authorities in planning and coordination of training programmes for AE/NFE personnel throughout the district and to provide necessary support to such programmes organised outside the DIET.
2. To serve as the nodal branch for organising (i) Programmes of induction training and continuing education for instructors, supervisors/*preraks* of NFE/AE to be organised in the DIET (Programmes for *preraks* of AE will be done in conjunction with the SRC). (ii) Orientation programmes for resource persons of the following kinds : (a) Those who would conduct programmes mentioned in (i) at other centres in the district (i.e. outside the DIET) e.g. personnel from NYK, NFE/AE projects, NGOs etc, and (b) Resource persons for the successful implementation of AE/NFE programmes as a whole e.g. extension functionaries of development departments, community leaders, retired teachers, ex-servicemen, NSS volunteers, ICDS functionaries, others involved in Mass Programme of Functional Literacy (MPFL) etc.
3. To provide instructional inputs into (i) core areas of the above programmes e.g. need, philosophy, objectives, methodology, evaluation, problems, etc in NFE/AE, and (ii) teaching of such individual subjects/areas as the staff may have necessary background in, especially teaching of language, arithmetic and functional skills
4. To evaluate and monitor the quality and efficacy of training programmes of NFE/AE personnel held in and outside the DIET and to strive for their continuous improvement
5. To maintain a database on all NFE/AE personnel who undergo training at the institute and to organise follow up activities pursuant to such training.
6. To undertake with the help of other concerned branches, the following activities vis-a-vis curriculum, basic and post literacy teaching learning materials, low-cost teaching and evaluation tools for AE/NFE (i) Adaptation of existing curricular units, teaching-learning materials etc. to suit local requirements, and (ii) Development of new locally relevant items.
7. To undertake field interaction (including extension) work vis-a-vis the AE/NFE projects

and centres in the district and to act as the referral unit for academic problems thrown up by the field in the areas of AE/NFE.

8. To help the DBE and AE/NFE authorities in organising media support for the AE/NFE programmes.
9. To undertake action research in all areas relevant for making NFE/AE more effective-in collaboration with other branches, to the extent necessary.
10. To provide AE/NFE related inputs into all programmes of the Institute not listed above, especially pre-service education programmes for teachers.

#### *Qualifications and Experience of Faculty Members*

The Vice-Principal/Sr. Lecturer should have (i) Master's Degree in Humanities, Social Sciences or Sciences and (ii) Degree/Diploma in Adult Education/Social Work/Community Development/Rural Development, Women Studies/Communication/Journalism or Degree in Teacher education with specialisation in Adult/Non-formal education or an additional 2 years experience of the kind mentioned in (i) and (ii).

#### *Resource Centres for Teachers*

Teachers need resource centres for their professional work. Many schools do not have essential equipment and audio visual materials which make teachers handicapped. Resource centres not only can help teachers get these facilities but also can provide appropriate resource materials. They can operate at different levels. They are organisations "where teachers can meet regularly and informally" (Corbett 1971). Teachers centres can provide opportunities for group efforts to improve individual's work. School cluster programme is not new to Indian situation. In fifties, school complex activities were found in Maharashtra. In 1966, Kothari Commission gave stress on organisation of school complexes where one higher school took leadership for development of its neighbouring schools of lower level. Lack of funds for organising school complex activities did not make this idea function effectively in many parts of the country. CBSE (1996) mentioned that since 1987, Savodaya school complexes were in operation. These encourage professionalism among teachers, encourage innovations, enable sharing of experience and facilities, promote interschool collaboration, and ensure observance of norms and conducts.

Dept. of Education (1989) Report suggested try-

ing out a centrally sponsored programme of Teacher's Centers on the pattern of the U.K. assisted Andhra Pradesh Primary Education Project. The report outlined activities of teachers centres in the following manner :

"A centre may be established in a centrally located primary school for the benefit of a cluster of nearby schools having roughly 25 teachers. To begin with, such centres may be taken up in one district of each State, and gradually more districts may be taken up with a view to covering about 25% of the primary teachers by the end of the Eighth Plan period. A Teachers' centre may hold at least six monthly meeting in an academic session, where primary teachers would gather and share experiences, take up creative activities and be helped by their colleagues, supervisors and other resource persons, especially as a follow up to in-service programmes and innovative measures. These centres could in course of time get merged into a School complex as complexes." (P. 43)

#### *Block Resource Centres (BRC)*

Block Resource Centre (BRC) under the District Primary Education Programme (DPEP) aims at providing teacher support activities and facilities for decentralized training. A BRC is managed by a senior and experienced upper primary school teacher and/or principal. Its training team members are to be drawn from the faculty of DIETs, colleges and universities and competent NGOs. A BRC is expected to provide one week residential in-service training to teachers, heads of schools and cluster resource teachers.

A Block Resource Centre resource persons need to be specially selected and trained for the purpose. DPEP needs to accept UNICEF model of training for joyful learning that utilises primary school teachers as resource persons. Out of a training camp of 30 to 40 prospective resource persons, 10 to 15 resource persons are selected. After selection, specific programmes are organised to equip them to act as teacher trainers.

#### *Cluster Resource Centre (CRC)*

A Cluster Resource Centre (CRC) serves 10 to 15 primary schools. It provides opportunity for undertaking classroom visits, short meetings and discussions. A senior and experienced primary school teacher acts as the Resource teacher of the cluster. School Clusters have been found useful in other countries (Halliday 1995). School clusters in various forms

also existed in our country. There are regular monthly meetings, demonstrations resource persons and discussions are held.

#### **Conclusion**

The *Programme of Action* (1992) document reported suggestions of evaluation studies undertaken by various agencies on the centrally sponsored scheme of Teacher Education. The reports suggested steps to be taken for improved organisational pattern covering : (a) Effective personnel policy and prompt filling up of posts with competent persons, (b) Sufficient financial and administrative delegation to the principals, (c) Streamlining flow of funds to institutions, and (d) Balance between pre-service training and in-service training. The scheme has certain inherent limitations for which it has not been functioning effectively. Paucity of funds does not allow state governments to implement the agreement to continue to maintain staff position. In many states, IASEs do not have appropriate and adequate faculty. Many of them do not have regular Principals. The IASE at the Govt. Comprehensive College of Education, Rajahmundry, Andhra Pradesh had only three members of faculty with which it was managing both B.Ed. and M.Ed. programmes. The CTE at the KSUB Training College, Bhajanagar, Orissa had also three members of faculty. While NCTE norms prescribe a teacher student ration of 1:10, the teacher student ratio in the CTE at Mangaldoi, Assam was 1:20. The states might have gone for IASE and CTE schemes to avail of the material resources without taking note of the fact that lack of adequate human resources can convert material resources into junk. Thus, IASEs and CTEs, in many cases are institutions where colossal wastage of material resources are found. This scheme might have been more effective if special institutions had been established by the central government. Some of the IASEs also function under the universities. Their position is also not much better.

Staffing pattern suggested in the scheme needs review. Posts have been suggested without taking into consideration the ground reality. Models existing in Regional Institutes of Education might have been taken into consideration. The guidelines suggest a post of lecturer for Work experience. Majority of the existing institutions have either no posts for Work experience or have a craft instructor. There is a suggestion for posts of lecturers in Commerce. These method teacher posts are necessary only when provision for such teaching exists at secondary school stage. Posts have been sanctioned in CTEs and IASEs without considering the facilities to be provided for various method subjects. As promotion to the posts



of Readers is also undertaken on time scale basis, there need not be any specification for the post of a Reader for a particular subject. Number of staff members is found to be too much in comparison to the work load. Thus there is an urgent necessity to revamp the scheme.

Acharya Ramamurti Report (1990) suggested that thrust areas for a DIET may be : (a) univesalization of Elementary Education, (b) Early Childhood Care and Education, (c) Women's education with emphasis on gender perspectives to the entire educational process, (d) Education for promoting equity and social justice among SC/ST and other educationally backward sections of society including minorities, (e) Vocationalisation of the entire educational process, and (f) Examination reforms modularisation, and multiple entry and exit points.

The District Institute of Education is a good scheme. But it has certain inherent limitations. The scheme prescribes various types of qualifications for faculty members of DIETs. While prescribing such qualifications the status of elementary teacher training institutions should have been studied. The Principal of a DIET may or may not be a M.Ed. Whereas the norms of NCTE prescribe that a principal for elementary teacher training institution has to be a M.Ed/M.A. (Education). While formulating DIET scheme the educationists need to have given more stress on postgraduates in Education than postgraduates in content knowledge. The guidelines of DIET need to be modified on the basis of NCTE norms. The guidelines mention about provision of continued school teaching experience. But this is rarely followed. In case of a large number of DIETs, the faculty members do not possess elementary school teaching experience. Most of the DIET are yet to be declared as non vocational. In certain states, DIETs are not autonomous. DIETs have also a lot of material resources. In many cases non provision of adequate and appropriate human resources have led to colossal wastage of funds.

Recent developments in teacher education have been helping schools get more efficient teachers and have been encouraging teachers to improve their professional capabilities. But, many States have not been able to respond appropriately to the initiatives of the central government. They need to be motivated in this regard. The new models, such as IASE, CTEs, DIETs etc need to be given autonomy for effective action. UGC has initiated scheme of autonomous colleges. IASEs need to be autonomous. BRCs and CRCs need also certain autonomy to carry out their programmes effectively.

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## NATIONAL INSTITUTE OF NUTRITION

(Indian Council of Medical Research)

Jamai-Osmania, Hyderabad-500 007

Three-month Postgraduate Certificate Course in Nutrition for persons possessing MBBS or Master's Degree in Biochemistry/ Physiology/ Food & Nutrition/Dietetics, will commence from 1st December, 1998. Application forms and prospectus, obtainable from Director, National Institute of Nutrition, Jamai-Osmania, P.O., Hyderabad-500 007, should reach before 31st August, 1998. Preference will be given to inservice candidates. Limited seats are available for private candidates. For details contact on Phone No. 7018234.

Date : 26.6.98

DIRECTOR

# Pharmaceutical Information Sources

## A Review

Praveenkumar Kumbargoudar\*

### Introduction

Pharmaceutical Science is as old as human civilization. The word 'Pharmacy' is derived from the Greek word 'Pharmakon' meaning 'Medicine' or 'Drug'. The subject of Pharmaceutical Science may be defined as art and science of preparing and dispensing medicines and includes the requisite knowledge and skill to carry them out in practice.

The success of Health Science and Medical Science depends on Pharmaceutical Science. Due to the ever developing nature of Pharmaceutical technology, it is needed to upgrade the subject knowledge in depth. As such, knowledge of information sources is necessary for the medical professionals, who are related to pharmacy directly or indirectly.

### Information

The term 'information' has been derived from two Latin terms 'Forma' and 'Formatio', both these words convey more or less the same meaning of giving shape to something and forming a pattern. The terms such as thought, knowledge, facts, data, ideas etc are used as synonyms or near synonyms for the term 'information'.

Education and Research are the basic means through which new information is generated and communicated. Any information is effective and useful only if it is to be communicated. Information sources are the channels through which the information gets disseminated.

### Information Users

Like all the other scientific and technical disciplines, pharmaceutical science and technology is also dynamic in nature. As such, it is imperative for the pharmacists, medical practitioners, scientists, pharmaceutical industrialists and medical librarians to know about pharmaceutical information sources.

### Need for the Study

Continuing research and developmental activities have resulted in large increase in information,

leading to 'Information Explosion'. It is noted that more than 20000 scientific and technical articles are published worldwide in one day. As such, it becomes inevitable for the medical professionals to search mass of information rapidly for the satisfaction of a specific information need. Further, for the pharmacists, who want to keep uptodate, reliance on the traditional printed form of literature is no longer sufficient. Hence, the pharmacists and the other medical professionals must be aware of the new sources for locating the data, have access to them and knowhow to use them effectively and keep abreast of the changes in the pharmaceutical science and technology.

### Information Sources

In all subject disciplines, information sources can be broadly classified as primary, secondary and tertiary sources. They play an important role in meeting the challenge of maintaining awareness of the development of the subject. The paper studies the various pharmaceutical information sources in brief.

#### PRIMARY SOURCES

Primary sources publish new and latest information in detail. In other words, these are first hand sources and publish new information generated through research work. Following are the few primary sources.

#### *Theses and Dissertations*

The new information originated through research and development is first published in research reports, theses and dissertations. Hence, theses and dissertations are reliable primary sources of information for a specific information need. Usually they are not easily accessible due to their unpublished status. But some periodicals publish brief details of the theses submitted to the universities. For example : 1. *Indian Journal of Pharmaceutical Education* (Monthly) Published by Association of Pharmaceutical Teachers of India, Bangalore; 2. *Theses of the Month*, a column published in the *University News* (Weekly) Published by the Association of Indian Universities, New Delhi; 3. *Dissertations Abstracts International* published by University Microfilms, U.S.A.

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## Patents

A patent is usually of about ten to twenty pages comprising a description of an invention. A patent is a limited monopoly or a privilege granted by government to the inventor of an invention to have the sole right to operate or gain from the invention for a certain number of years, in return the inventor discloses his patent that is how to carry out the invention. Information regarding the pharmaceutical patents is available in the following periodicals : 1. *Patent Office Journal* (Annual) Published by Patent Office, Calcutta; 2. *Gazette of India* (Part-III Section 2) Published by Govt. of India, Delhi.

## Standards

Standards are the conventional rules or procedure or a norm established by a recognised authority, custom or through general consent and aimed at specification, unification and simplification in all the fields with a view to achieve improved efficiency. Usually the standards are published by national and international standards organisations. In India, Bureau of Indian Standards approves and publishes the standards. Sources : 1. *ISI Bulletin* (Monthly) published by Bureau of Indian Standards, New Delhi; 2. *Magazine of New Standards* published by American Standards Association; 3. *British Standards Year book* (Annual) published by British Standards Institution

## Conference Proceedings

Conferences, seminars, symposia etc are very important primary sources of information. In conferences, new papers are presented and discussed so as to disseminate new information. Following are the various pharmaceutical publications which publish information regarding forthcoming events such as conferences, symposia etc. 1. *Pharmatimes* (Monthly). Published by Indian Pharmaceutical Association, Mumbai; 2. *The Indian Journal of Medical Research* (Monthly) Published by Indian Council of Medical Research, New Delhi.

## Periodicals

A periodical or journal is published under one regular title and appears at set time periods — for example, weekly, fortnightly, monthly, bi-monthly, quarterly, twice-yearly and annually. Each issue of the periodical usually contains more than one article and also contains news regarding new pharmaceutical products, and events such as conferences and seminars.

The new information first gets published as articles in periodicals. Hence, it is one of the effective

sources of information as it contains original information and has wide circulation at frequent intervals. For example : 1. *Express pharmacopulse* (weekly); 2. *American Journal of Health System Pharmacy* (Fortnightly); 3. *Indian Drugs* (Monthly); 4. *Indian Journal of Hospital Pharmacy* (Bi-monthly).

## Books

A book is a most reliable source for getting detailed information, as it presents the consolidated information on a topic or subject published by different other primary sources. Treatises, monographs, textbooks etc are the various forms of the books. For example : 1. Craig, CR and Stilzel, RE : *Modern Pharmacology* ED4. New York : Little Brown and Co., 1994; 2. Kokate, CK and others : *Pharmacognosy* ED5. Pune : Nirali Prakashan, 1997; 3. Mithal, BM : *Textbook of Pharmaceutical Formulations*. Ed6 Delhi : Vallabh Prakashan, 1997.

## SECONDARY SOURCES

Every year millions of periodicals, books and other documents are published in different languages leading to information explosion. As such it is difficult for a research scholar to search all the documents published and then there is also the language barrier. This has led to the publication of secondary sources of information

The secondary sources do not provide full and detailed information, but point towards the correct primary information sources. In other words, secondary sources contain information from any or all of the primary sources previously mentioned, which has been modified, selected, rearranged or compacted usually by someone other than the original author possibly for a specific scientific purpose or users. Following are few secondary sources.

## Indexing Sources

An indexing periodical is one which provides information about the articles published in the primary documents giving the full bibliographical details such as author, title of the article, name of the periodical, volume no. issue no, month and year of publication including pagination. These are only pinpointed information guides for seeking information on primary documents. For example : 1. *Index medicus* (Monthly); Published by National Library of Medicine, USA; 2. *Pharmaceutical News Index* Published by Data Couriers Inc, United Kingdom; 3. *Current Contents : Life Sciences* (Weekly); Published by Institute for Scientific Information, Philadelphia (USA).



## Abstracting Sources

An abstracting source is a source which provides information regarding the articles published in the primary documents furnishing full bibliographical details alongwith brief summary (abstract) of the articles. For example : 1. *International Pharmaceutical Abstract* (Fortnightly) Published by American Society of Hospital Pharmacitsts. 2. *Excerpta Medica* Published by Excerpta Medica Foundation, Amsterdam.

## TERTIARY SOURCES

When it is difficult to get sufficient information about primary and secondary sources, the tertiary sources help us search for these documents. Tertiary Sources are derived from either primary sources or secondary sources or both of these. These sources include specialised guides to the literature which direct the users to the secondary sources. These include bibliographies, guides to periodical literature etc. For example : 1. *Information sources in science and technology* Published by Bharati Publication, Delhi 2. *Bibliography of bibliographies on India* Published by concept Pub. Co., New Delhi.

## Specialised Pharmaceutical Sources

The specialised sources are the Secondary Information sources, which list drugs, chemical compounds, pharmaceutical and laboratory reagents. They include pharmaceutical dictionaries, Drug Encyclopaedias, Pharmacopoeias and Formularies etc.

### Pharmacopoeias and Formularies

A Pharmacopoeia is a compendium laying standards for medicinal and pharmaceutical substances and formulated preparations. In other words, a Pharmacopoeia or a formulary is a book containing list of medical substances (drugs) and/or articles with descriptions, tests and formulas for preparing the same, selected by some recognised authority. The recognised authority is appointed by the government of a country. For example : 1. *The Indian Pharmacopoeia* 1996. 2. Volumes Published by Govt. of India, New Delhi. 2. *US Pharmacopeia and the National Formulary*, 1995 Published by the United States Pharmacopeial Conventions Inc. Rockville (USA). 3. *British Pharmacopoeia* 1993, 2 Volumes Published by Scottish Home and Health Dept., London.

### Drug Encyclopaedias

Like national and international Pharmacopoeias several other drug encyclopaedias are also published

by internationally reputed pharmaceutical organisations. The main aim of these publications is to provide practising pharmacists and medical practitioners with unbiased evaluated detailed information on drugs and medicines used throughout the world. These encyclopaedias include names of the drugs, chemical compounds, their preparation, molecular formula, patent information, trade marks, therapeutic category, action and reaction etc. For example : 1. *The Pharmaceutical Codex : Principles and practice of Pharmaceutics* 1994. 12th ed. Published by the Pharmaceutical Press, London. 2. *MARTINDALE : The Extra Pharmacopoeia* 1996 Published by Royal Pharmaceutical Society, London. 3. *The Merck Index : An encyclopaedia of Chemicals, Drugs and Biologicals*, 1996 Published by Merck and Co. Inc., New Jersey.

### Pharmaceutical Directories

A Pharmaceutical Directory is a list of names and address of Pharmaceutical organisations, associations, institutions, manufacturers of drugs with their products, chemists and druggists etc. Some of these sources also include official information such as Drug inspectors, drug controllers and list of pharmaceutical educational institutions and colleges. For example : 1. *Indian Pharmaceutical Guide* 1997. 35th Ed. Annual Directory Published by Pamposh Publications, New Delhi.

## Computerised Information Sources

Now the large secondary information sources have begun using computers for compiling their documents. At present, various computer databases such as *Remington's Science and Practice of Pharmacy*, *Excerpta Medica*, *Martindale* etc are available in the form of CD ROM diskettes. Current contents are also made available on Diskette from May 1991 onwards

Research and development activities are the basic means to generate new information. For development of any subject, research is essential. For conducting research, knowledge of current information is required. Hence, information generation, communication and information search goes like a cycle. The information sources — tertiary, secondary and primary sources — are searched respectively so as to get right information in a short period of time.

Of course, it is only the information sources, stated above, that have solutions to the problems of pharmacists. Hence, it is necessary on the part of the pharmacists and other medical professionals to have an acquaintance with these sources.

# Education, Health and Market Economy

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**Prof. P.N. Tandon, Emeritus Professor of Neurosurgery, All India Institute of Medical Sciences, New Delhi, delivered the Convocation Address at the Twentieth Convocation of Institute of Medical Sciences (Faculty of Ayurveda & Faculty of Medicine) as a part of the Eightieth Convocation of Banaras Hindu University. He said, "In this era of emphasis on market economy, when even universities are being asked to earn for their sustenance, I am worried about the fate of the poor and underprivileged. Should they be denied education or medical care since they do not have the resources to "feed" the markets? Let me say with all emphasis at my command that following this mindless course dictated by others will only bring disaster. Education and health are basic human rights which have to be provided by the State. Markets have no soul, while education and health care require compassion." Excerpts**

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With starry eyes, in our innocence or ignorance or youthful excitement, 50 years ago the people of my generation believed that by throwing away the yoke of foreign rule we would promptly get rid of the prevailing ills of our country — poverty, illiteracy, ever present threats of famine and hunger, rampant prevalence of diseases born out of these. We once again regained our pride to be an Indian and believed to have become the master of our destiny. During the fifty years we have seen developments which we could be proud of, and which in my opinion would not have been possible, if we had not become independent. Much against the predictors of doom, India has remained a united nation where democracy has taken roots, we have achieved virtual self-sufficiency in food. We are one of the few nations in the world who has developed indigenous competence in the fields of atomic energy, space, remote sensing, missile technology. We have established hundreds of national laboratories, multiplied several fold our institutions of higher learning, diversified our industry atleast to

become internationally competitive in some areas. At the same time we cannot overlook that based on human development indicator (HDI) ratings we are today among the lowest ranks, far below Sri Lanka and China, just below Myanmar and Pakistan and only somewhat better than Bangladesh and Bhutan. Nearly 40 per cent of our people live below poverty line. According to a recently published report by National Nutrition Monitoring Bureau, nearly 80 per cent of our children suffer from mild to moderate malnutrition, we still account for the largest number of illiterates in the world. It is obvious that we have achieved a lot, but it is equally clear that we could have and should have done far better than what we have done.

In respect to our own profession, no doubt there have been significant achievements but I am afraid, not much to be proud of. The life expectancy at birth which was around 30 years at the time of our independence has already doubled to over 60 years. The infant mortality which was 140 per thousand live births is now reduced to half (71 per 1000). Death

of children under five accounted for nearly half of all deaths in 1971, it was close to one third by 1991 (World Bank, 1993). The crude death rate has fallen from 19 per thousand in 1971 to 9.8 in 1991. During the same period the birth rate has declined from 41.2 per thousand to 28.5 per thousand. The maternal mortality has also shown a downward trend from around six to below 4 per cent. The total fertility rate has declined from 5.97 between 1950-55 to 3.6 in 1991. The sad part of the story is that in all these indices we still are far below the levels achieved by all developed and most developing countries in the world.

The major challenges in the health field remain high prevalence rates of under-nutrition. Micronutrient deficiencies (iodine, iron, zinc) plague large parts of our population. We are all aware that the infectious diseases continue to be number one cause of death in the country. It is estimated that there are 3 million infectious and 12 million non-infectious cases of tuberculosis resulting in over half a million deaths every year. The spectre of its becoming worse due to the increasing incidence (already around 10%) of multidrug resistance and the HIV epidemic looming large is very real. Malaria which was brought under control in 1960s has become a serious threat with approximately 2 million cases occurring every year. 45 million people are infected with microfilariasis with approximately 19 million cases of clinical filariasis. Kala-azar has re-emerged with over 300,000 cases reported in 1991. Deaths from diarrhoeal diseases, respiratory infections specially in childhood, epidemics of Japanese encephalitis, hepatitis and dengue haemorrhagic fever continue to take their toll year af-

*(Contd. on page 20)*

## Indian Students Joining Abroad — 3

## Annual Outflow State-wise, Sex-wise &amp; Subject-wise - 1994-95

S. No.	State/UT	Law		Comm./B. Adms./B. Mgt		Bnk & Ins		Fine Arts		Lib. Science		Other Subjects		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1.	Andhra Pradesh	...	1	42	7	...	...	...	...	...	...	55	7	439	57
2.	Arunachal Pradesh	...	...	...	...	...	...	...	...	...	...	...	...	1	...
3.	Assam	...	...	3	...	...	...	...	...	...	...	5	1	15	2
4.	Bihar	...	...	42	1	...	...	...	...	...	...	10	5	185	16
5.	Goa	...	...	4	...	...	...	...	...	...	...	1	...	8	2
6.	Gujarat	2	...	13	1	...	...	...	...	...	...	6	2	67	14
7.	Haryana	...	...	12	...	...	...	...	...	...	...	5	2	31	4
8.	Himachal Pradesh	...	...	2	...	...	...	...	...	...	...	...	...	2	...
9.	Jammu & Kashmir	...	...	2	...	...	...	...	...	...	...	1	...	9	...
10.	Karnataka	...	3	47	6	...	...	3	...	...	...	36	13	227	42
11.	Kerala	...	...	15	1	...	...	...	...	...	...	22	1	95	7
12.	Madhya Pradesh	...	...	22	...	...	...	...	...	...	...	14	3	67	8
13.	Maharashtra	1	...	34	4	...	...	4	2	...	...	42	5	220	32
14.	Manipur	...	...	...	...	...	...	...	...	...	...	...	...	1	...
15.	Meghalaya	...	...	1	...	...	...	...	...	...	...	...	...	5	...
16.	Mizoram	...	...	...	...	...	...	...	...	...	...	...	...	...	4
17.	Nagaland	...	...	...	...	...	...	...	...	...	...	...	...	...	3
18.	Orissa	...	...	2	...	...	...	...	...	...	...	...	...	13	...
19.	Punjab	...	...	14	...	...	...	...	...	...	...	6	1	43	8
20.	Rajasthan	...	...	1	...	...	...	...	...	...	...	3	1	14	2
21.	Sikkim	...	...	...	...	...	...	...	...	...	...	...	...	1	...
22.	Tamil Nadu	2	...	42	4	1	...	...	...	...	...	35	17	223	54
23.	Tripura	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24.	Uttar Pradesh	...	...	29	5	...	...	...	...	...	...	19	13	115	33
25.	West Bengal	2	...	89	6	...	...	6	20	1	2	44	36	257	111
26.	A. & N. Islands	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27.	Chandigarh	...	...	5	1	...	...	...	...	...	...	10	2	28	5
28.	Dadra & Nagar Haveli	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29.	Daman & Diu	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30.	Delhi	4	2	169	19	1	...	5	2	...	...	96	16	436	73
31.	Lakshadweep	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32.	Pondicherry	1	...	1	...	...	...	...	...	...	...	1	...	3	...
Total		12	6	591	55	2	...	18	24	1	2	414	129	2505	478

Source : Department of Education, Ministry of Human Resource Development, Government of India, 1998.



(Contd. from page 17)

ter year. The menace of HIV/AIDS infection threatens to outstrip all other infectious diseases in the next decade or so.

To this may be added pressures of unabated population increase and the disease burdens of demographic transition. With increasing life expectancy, there is an increase in the number of those susceptible to a host of non-communicable diseases — hypertension, cardiac and cerebrovascular diseases, diabetes, cancer and other degenerative disorders like arthritis, osteoporosis, senile dementia and Alzheimer's disease.

It is not commonly recognised that the socio-political compulsions of rapid, often poorly planned, development bring in their wake multitudes of health problems. A proliferation of water bodies provides for extra breeding sites for vectors like mosquitoes. Agricultural use of pesticides predisposes to cardio-pulmonary, neurological and haematological disorders. Use of pesticides in India has increased from 200 tons to 72000 tons per year. Rapid industrialisation, without implementing measures for environmental protection, results in pollution of air and water. A recent World Bank survey estimated 7500 deaths each year attributable to air pollution in Delhi. It has been pointed out that the annual health damages from fossil fuel air pollution in Mumbai alone costs one billion dollar. Rural-urban migration, in absence of adequate civic facilities, results in unhygienic living conditions, not only predisposing physical and mental health problems of the involved population but providing a reservoir for spread of infections in rest of the community.

It is not my purpose to catalogue or elaborate on all these persisting and multiplying threats to human health, but just to point out

that in this era of specialisation burdened with the care of the increasing number of sick and diseased, we are likely to lose sight of these unmitigated dangers to human health. We could no doubt be proud of the achievements in the field of tertiary medicine, we have now the expertise and infrastructure at least in some institutions like yours, which could provide the most sophisticated services, be it cardiac, neuro or transplant surgery. No patient need to go abroad for such treatment today. However, we may be tempted to deny our responsibilities in regard to preventive medicine attributing the prevailing health problems mentioned above to socio-economic and environmental factors beyond the purview of health professionals. May I humbly submit that medical profession has a crucial role to play in meeting these challenges.

The past fifty years have witnessed a proliferation of medical institutions and establishment of a host of research institutes, the like of which probably did not happen anywhere else in the world. This quantitative growth inevitably led to compromise with quality. However, one would have expected progressive improvement in the standards as time passed. Regrettably not only this did not happen in the new institutions, even the well established ones witnessed a decline. In recent years there has been another ominous trend which threatens to create purely commercially motivated institutions, as a means to lining the pockets of the unscrupulous and powerful people with no genuine interest in standards or ideals of education.

Most of our medical colleges are ill-equipped, poorly staffed, and starved of adequate funds to provide optimal patient care. Infrastructure facilities for teaching and more importantly for learning are archaic or non-existent. Postgradu-

ate courses are started without the availability of state of art diagnostic or therapeutic facilities.

I am happy to learn that recently the Japanese International Co-operation Agency has provided a magnificent grant to modernise the Sir Sunder Lal Hospital. This brings me to the important question as to who should support such institutions. In this era of emphasis on market economy, when even universities are being asked to earn for their sustenance, I am worried about the fate of the poor and underprivileged. Should they be denied education or medical care since they do not have the resources to "feed" the markets? Let me say with all emphasis at my command that following this mindless course dictated by others will only bring disaster. Education and health are basic human rights which have to be provided by the State. Markets have no soul, while education and health care require compassion. It will not be out of place to mention that such distinguished economists as Gunnar Myrdal, Amritya Sen and Mahbub-ul-Haq who have changed the whole paradigm of development have repeatedly urged the governments of the developing countries to invest liberally in these two areas. It is essential to recognise that it is the responsibility of government to provide for the needs and opportunities where the potential benefits to society warrant a greater investment than the prospective returns to the private sector can elicit.

What of medical research then? As such as I would like to state otherwise, I find no choice but to say that the current status of medical research in the country is poor. There are no doubt individuals, groups and institutions who have demonstrated excellence. However, our collective efforts are sub-critical and sub-standard both qualitatively and quantitatively. Two

scientometric studies carried out in recent years provide ample proof for this statement. Based on a survey of research publications of 128 medical institutions included in Science Citation Index between 1981-88, Reddy *et al* observed that only 6 (4.7%) had over 50 articles per year, BHU was one of them. 33 (36%) had 5 to 50 articles included, 43 (38%) had 1 to 5 articles and 41 (32%) had less than one article included. In a thought provoking paper in Current Science recently, Arunachalam not only highlighted this deficiency but even challenged the relevance of whatever little was going on. He pointed out that the efforts were least where these were most needed taking into consideration the national morbidity and mortality statistics.

May I for a moment pause to reflect on the links between patient care, teaching and research. To go back to our roots let me quote Charak, "*Sukham Samagram Vijnane Ca Prtishthita*" : (All happiness is related in good science). He advocated "*A physician should remain, in a sense, a student all his life, gaining experience, knowledge and understanding*". Susruta echoed the same sentiment, "*In order to broaden your knowledge and outlook, you should study the subject regularly, take part in scientific debates and discussions, observe the allied sciences and take training from specialists of those branches*".

In more recent years Osler reminded us that "*A physician's education begins rather than ends when he receives a degree*". He chided, "*It is astonishing with how little reading a doctor can practice medicine, but it is not astonishing how badly he may do it*".

While teachers play a catalytic role in one's preparation for embarking on a career, even more so to achieve excellence, the real efforts required for it are those of the student. The philosopher poet Khalil

Gibran aptly pointed out "*A teacher does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind*". To this let me add the advice of one of my teachers Wilder Penfield, "No disciple can borrow greatness, he can only use such wit as he has, in an ever changing world. But he can adopt the manner of work and the way of life he has admired".

In the words of Lord Ashby, "*The commitment of a teacher is not only to transmit knowledge, it is to transmit a tradition of scholarship, and attitude to phenomenon...*". Michael Bishop summarised the purposes of teaching: First to inspire, Second to challenge, Third and only third to impart information. I am afraid many of our present day medical teachers restrict themselves to the third — imparting information and that too often poorly! One of the reasons for this could be that they themselves are not involved in learning. I do not mean that they do not occasionally read some books or journals, I am afraid many don't, but real learning comes from actively pursuing research. Gurudev Rabindra Nath Tagore reminded us, "*A teacher can never truly teach unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame*". From my personal experience I have no doubt that patient care, teaching and research are intricately linked and mutually dependent. Failure to pay heed to this, is to my mind, one of the important causes of poor state of our health care delivery, and medical education.

It is often stated that it is not the lack of knowledge that is needed to solve vast majority of our health problems, but it is our inability to use the already existing knowledge. But it is a fact that never in the history of mankind we had more diagnostic tools and drugs to deal with human diseases and yet never

in the history there has been in sheer numbers more unhealthy — more diseased people in need of health care. The inequities in the capabilities and capacity to deal with this vast human problem between the developing and developed countries and between the urban elites, urban slums and rural population within a country continues to widen. The irony of our current situation is that where the needs are the greatest, the resources and capabilities are the least. It has been estimated that 93 per cent of world's burden of preventable mortality occurs in the developing countries. Yet, of the 30 billion dollar global investment in health research in 1986 only 5 per cent or dollar 1.6 billion was devoted specifically to health problems of developing countries. Out of this only 4.2% i.e. dollar 685 million originated in the developing countries.

It is true that we need not 'Re-Search' what is already researched elsewhere. However, in the field of medicine there are several reasons to even do that. Many of the diseases prevalent in our country may be of no concern to others. Diseases are often locale specific, hence solutions have to be so. Many diseases are determined by genetic, socio-economic, cultural factors influenced by the eco-system. While there may be commonality of problems there is necessarily no identity of solutions. Local customs, beliefs, taboos, superstitions, all influence health as also acceptance of measures to promote health and prevent diseases. Without the endogenous competence in S&T it is not possible to identify and exploit one's potential strengths taking advantage of indigenous heritage and resources. Unmindful imitation of Western culture and neglect of our traditional life style and dietary habits threaten to introduce diseases and ill health alien to our society. On the other hand having ne-

glected scientific evaluation of the vast repertoire of drugs used in our traditional systems of medicine and by our diverse tribal populations has resulted in piracy of this knowledge and loss of valuable resources of our bio-diversity. It is a pity that we failed to follow up Malaviyaji's recommendation and initiative in this regard. In one of his letters to the then Government of India he wrote, *"The Hindu system of medicine shall here be brought up-to-date and enriched by the incorporation of the marvelous achievements which Modern Medical Science has made in Anatomy, Physiology and Surgery, and all other departments of healing art both on the preventive and curative side"*. This was no more narrow nationalistic chauvinism or parochialism, but a very broad minded vision. Yours is the only University in the world where two Faculties — Ayurveda and Modern Medicine are an integral part of the establishment. Here is an opportunity and challenge for you all to exploit the strengths of each in a spirit of cooperation and collaboration rather than confrontation and creation of barriers. Ironically today more than half a century later there is increasing interest in this field globally, while we still are guarding our limited empires.

While framing our future agenda I humbly suggest to you some guidelines for formulating our programmes. We have now a reasonable strength of highly trained professionals and institutional infrastructure, we need a national will to accept the challenges and convert these into opportunities for collective action. We need to generate reliable population based epidemiological data, monitor and evaluate the existing national health programmes, develop preventive strategies for newly emerging causes of morbidity and mortality while scientifically evaluating known knowledge to more effectively tackle the age old scourges.

We should enhance our capabilities for problem evolving through changes in educational strategies and where necessary through international collaboration. There is a crying need for tackling the problems of population control, continuous vigilance and unrelenting efforts to meet the challenges of infective and development related diseases and burdens of demographic transition. There is an urgent need for coordinated effort to exploit natural products, and traditional remedies for drug development. We should be prepared to utilise the recent developments in molecular biology, biotechnology and genetics to solve our national health problems more reliably, expeditiously and cost effectively. Finally in this era of commercialisation we should not lose sight to providing

for greater equity in health care.

It is the sacred duty of a physician to relieve human suffering caused by disease with understanding, sympathy, humility and honesty. To do so based on up-to-date knowledge and skill, enhances the benefits to the patients and prestige of the physician. To gather such knowledge and to add to it, though much more demanding, makes the difference between a leader and an average professional. Let me once again quote from the Convocation Address by Sir J.C. Bose, *"I will not appeal to your weakness but to your strength. I will therefore not set before you what is easy but use all compulsion for your choice of the most difficult"*. And further on, *"He alone who has striven and won can enrich the world by giving away the fruits of his victorious experience"*.

## ADMISSION NOTIFICATION

### TWO-YEAR MASTER OF MANAGEMENT SCIENCE (MMS) PROGRAMME (1998-2000)

AT  
THE TECHNOLOGICAL INSTITUTE OF TEXTILE & SCIENCES, BHIWANI

(Affiliated to Guru Jambheshwar University, Hisar)

Intake : 20

#### Eligibility :

B.E./B.Tech in any branch of Engg/Technology with minimum 60% marks in the aggregate OR Post-graduate degree in Physics, Chemistry, Math, Commerce, Economics or Statistics with minimum 60% marks.

#### Selection Procedure :

1. Written Test at Bhiwani on Monday, the 10th August, 1998 at 9.00 am followed by Group Discussion & Interview of short-listed candidates.

2. NRI candidates can be considered for admission on the basis of Personal Interview only provided they meet the minimum eligibility requirements.

Apply on prescribed Application Form which can be had alongwith the Prospectus by post upto 31 July, 1998 by sending a M.O./Draft for Rs. 400/- in favour of the Director, Technological Institute of Textile & Sciences, Birla Colony, Bhiwani-127 021 or on cash payment at counter of the Institute upto 7th August, 1998. The M.O. Coupon should clearly indicate that the Prospectus is required for MMS Programme.

**DIRECTOR**



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## CAMPUS NEWS

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### IGNOU Plans New Programmes

The Indira Gandhi National Open University (IGNOU) is reported to have decided to launch five new academic programmes from January next year. These are B.Ed., certificate in participatory forest management, Certificate in disaster management, post graduate diploma in translation and certificate in writing for radio

Dr. Abdul Waheed Khan, the Vice-Chancellor of IGNOU, said three more major programmes were in the process of being developed. These were training of youth leaders, training of rural youth in agriculture and horticulture and skill training for women in small enterprise management.

Dr. Khan said the IGNOU was now determined to make all-out efforts to provide services to educationally disadvantaged sections, especially rural populations, women and girls and the impoverished communities. These might include programmes that equipped people with employable skills in such areas as technical and vocational training, continuing professional education and agriculture and rural development. Continued attention would be given to improving the quality of programmes.

He said: "Our intentional operations will also receive particular attention with a view to increasing opportunities for IGNOU to reach out beyond the borders of India". In addition, he said it was his intention to seek views from key leaders in the field of education and industry "so that we may be more responsive to their needs and, therefore, strive to tailor our programmes to the requirements of the community."

Dr. Khan pointed out that from a modest beginning in 1985, the IGNOU's annual registration had now reached over 1,60,000. "We now have as many as 4,35,000 students in 325 study centres controlled by 19 regional centres."

However, the growth of the university had created certain problems in providing support services to the students.

The first tasks he did after taking over as Vice-Chancellor was to constitute a "task force" to suggest ways for providing services effectively to the students. The task force would review the operations relating to material distribution and suggest short term and long term corrective measures for expeditious, timely and complete dispatch of study material, suggest steps for greater utilisation of electronic media and suggest, if necessary, changes in procedures and work flows to streamline operations among other things.

#### PG Course in Transfusion Medicine

The Tamil Nadu Dr MGR Medical University proposes to offer a three year postgraduate course in Transfusion Medicine from this year. The Kilpauk Medical College and Madurai Medical College will follow suit and offer the course in 1999-2000.

According to Dr. D. Raja, Vice-Chancellor, the University will also conduct six months certificate course on Transfusion Medicine to educate those working in blood banks and allied services for spread of awareness on safe blood transfusion.

Speciality departments in Immunology and Curriculum will also be started. The Curriculum Department will offer orientation programmes for teachers so that they can keep pace with the current advancements and equip themselves with the recent methodology on "how to teach". A sum of Rs. 83 lakhs had been provided for the purpose.

Presiding over a CME programme today organised by the University and the Indian Society of Blood Transfusion and Immuno Haematology (ISBTI), Dr. N. Sundaradevan, Health Secretary, said the Supreme Court directive ensured that only licenced blood banks could operate and voluntary donations were the only source to meet demand. "A mass movement" to promote voluntary blood donation should be initiated.

Mr. K. Allaudin, Special Secretary, Health and Family Welfare, said division of a single unit of whole blood into components could benefit four patients instead of one. Efforts would also be taken to form voluntary blood donor clubs in colleges to augment supply.

Dr. C.S. Jayachandran, Director of Medical Education, said that a network should be formed encompassing the department of Blood Transfusion and the supply position should be such that no surgery got delayed for want of safe blood.

"Transfusion blood is a new field, combining the traditional science of Haematology with blood banking and transfusion. The actual preparation of blood components involved close monitoring of various physiological and biochemical processes, which by itself was a separate area of study, said



Dr. K.M. Radha-krishnan, Special Officer, Department of Transfusion Medicine.

### **Student Welfare Schemes in Tamil Nadu**

A workshop on "Strengthening the Career-Oriented Welfare Schemes for the Student Community in the Universities in Tamil Nadu" for the Directors/Deans of Students Welfare in universities and colleges was recently organised by the University Students Advisory Bureau (USAB), University of Madras.

Prof. M. Anandakrishnan, Vice Chairman, TNSCHE, inaugurated the workshop while Prof. P.T. Manoharan, Vice Chancellor, University of Madras, presided. The keynote address was delivered by Thiru K. Ramalingam, Director of Collegiate Education, Govt. of Tamil Nadu. Dr. (Mrs) Susila Mariappan, Secretary and Student Advisor, University Students Advisory Bureau, University of Madras, gave a brief description about the objectives of the workshop. She also listed USAB's activities as : giving guidance and counselling; offering job-oriented short-term courses; arranging placements for graduates; arranging training for students in the industries; organising entrepreneurship training for women; arranging career guidance exhibition in the colleges, etc.

Sponsored by Tamil Nadu State Council for Higher Education (TNSCHE), the workshop was attended by 48 participants representing Tamil Nadu Veterinary and Animal Sciences University, Alagappa University, Tamil Nadu Agricultural University, Bharathiar University, Mother Teresa Women's University, Gandhigram Rural Institute (Deemed University) and 17 colleges affiliated to various universities in Tamil Nadu.

The participants were divided

into three groups for presenting their reports, highlighting the initiatives they had taken on welfare programmes for the students of their campuses. The programmes they wished to introduce in future were also indicated by them.

After detailed deliberations, the following recommendations were made :

1. Students clubs viz Cultural Activities Club; Quiz Club; Drama Club; Competitive Examinations Training Club; Reading Club; Personality Club; Literary Club; Trekking Club; Student Newsletter Club; Skill Development Club etc be formed and the responsibilities for steering their activities could be entrusted to the students. Nevertheless the guidance of few senior faculties of the universities/colleges be ensured.
2. Tutorial system be introduced in colleges and universities to establish effective Student-Teacher linkage.
3. Short-term job-oriented courses like Aquaculture, Sericulture, Medicinal and Ornamental Plant culture, Ornamental Fish culture, Bio-fertilizer, Mushroom culture, Ticketing, Tourism, Journalism, Interior decoration, Spoken English, Personality Development, Assertive Training, etc, be arranged by the colleges. These programmes shall be made self supporting.
4. Career Guidance Facility Centre may be established to provide information on Scholarships, Placement avenues, Students seminars, Workshops, Competitions on Essay, Oratorical Drama, etc.
5. Mechanism be evolved and guidelines laid down for establishing effective liaison between the Students Welfare Department of the universities and the Counselling Centre of the colleges.

6. Student Welfare Fund (SWF) Scheme be introduced in all colleges and universities.
7. Students Placement should be given top priority by the colleges. Campus interviews should be arranged to benefit the outgoing students. This will help the colleges to establish sustainable linkage between industries, university and the colleges.

### **UNESCO Chair to Commemorate Gandhiji**

UNESCO is proposing to set up a UNESCO-Dept. of Ocean Development-Bhavnagar University-Mahatma Gandhi Chair for the Sustainable Development of the Coastal Area of the Gulf to Khambat.

The Chair will be located at Bhavnagar University. Mahatma Gandhi was a student of Shamaldas College, a constituent college of this University and one of the oldest colleges in Western India.

The Gujarat Ecology Commission has carried out a study of the Gulf of Khambat and its coastal degradation and plans to extend the study to the entire, very diverse coastline. Along the Jamnagar coast there are coral reefs on one side and mangroves on the other. The river Tapi which empties into the Gulf of Khambat is highly industrialised and polluted. The low-lying area around the Gulf faces severe problems : in the monsoon it gets floods; in winter, the tides inundate the land. Although the soil is fertile, lack of water has hindered economic growth, leading to migration of the inhabitants.

The region needs professional and managerial assistance. A UNESCO study, to be conducted under the Chair, will address these environmental issues from both scientific and socio-economic angles. It will examine water status (qual-

ity of drinking water and ground water availability) and the existing industries on the coast. It will also assess ocean wealth and educate and empower coastal dwellers. Research capabilities at the Marine Science Department will be strengthened and made multi-disciplinary.

UNESCO funds will also be used to provide (a) scholarships to young scientists for PhD studies on subjects relevant to the

project area and (b) attract visiting professors. Social scientists will be inducted into the study as well.

This multi-pronged three-year project expected to be launched in July, is most appropriately located in Bhavnagar University since its Marine Ecology this year. UNESCO funds will help in providing scholarships to train young scientists and in inviting experts from outside for lectures.

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## *News from UGC*

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### **Countrywide Classroom Programme**

Between 8th and 14th July, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. four days a week i.e. on Tuesdays, Thursdays, Saturdays and Sundays. On DD2 University Video Lecture Courses will be shown at midnight between 0000-0030 hrs. and in the morning between 10 to 10.30 a.m. on Monday through Friday.

Hindi Programmes are being telecast on Mondays, Wednesdays & Fridays from 6.00 to 6.30 a.m.

**8.7.98**

"Energy Flow-2 Energy Flow"  
 "Tulsi : From Worship to cure"  
 "Fishery Resources of India-3  
 The Indian Edible Oyster"  
 "Planetarium — The Indoor  
 Universe"  
 "Perspectives on Communica-

tion in Indian History"  
 "Medical Instruments & Diagnosis-2 Cat Scan & MRI"  
**UVLC**  
 "Home Management Residence Programme"

**9.7.98**

"Question Time-69"  
 "Telephone Conversation : Official Calls"  
 "Fishery Resources of India — The Indian Marine Pearls-1"  
 "Bio-Diversity Himalayas — Untold Story"  
 "Quality Circle"  
 "Rainout Shelter"  
**UVLC**  
 "The Indian National Movement : Gandhian Phase"

**10.7.98**

"Cobra — God at Mercy"  
 "Fishery Resources of India — The Indian Marine Pearls-2"  
 "Desert Locusts-1 : The Farmer's Foe"  
 "The Working Children of Kashmir"  
 "Perspectives in Persian & Urdu on Indian Religions"  
**UVLC**  
 "Psychodynamic Approach to

Personality"

**11.7.98**

"Bilinguation in India & Abroad"  
 "Polo-1 : The Royal Sport"  
 "Rothamsted — A Pioneer in Agricultural Research"  
**UVLC**  
 No Telecast

**12.7.98**

"Communication Skill-1 Story Telling"  
 "Classical Drums of India-1 The Music of the Mridangam"  
 "Murali Lahote — The Artist & his Art"  
**UVLC**  
 No Telecast

**13.7.98**

"Molecular Geometry-2"  
 "Hydroelectric Power Generation"  
 "Horticulture"  
 "Application of Technology Tools through Multimedia"  
 "The Rise of Bio Technology-3"  
 "A World of English-4 : A Good Language Learner"  
**UVLC**  
 "Buddhist Architecture"

**14.7.98**

"Vasundhara-2 The Dying Lake : Hussain Sagar"  
 "Dry Land Horticulture — A Sustainable Land Use Option"  
 "Tribals of Chhotanagpur-6 : Come, See my Home"  
 "Coffee Science-6 : Disease Management in Coffee"  
 "The Nilgiri Land slides"  
**UVLC**  
 "Joint Family in India"

#### Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

**8.7.98**

"कुचमनी ख्याल : एक कला"

**9.7.98**

“भारत की सांस्कृतिक धरोहर :  
सीतामऊं”

**10.7.98**

“तमिलनाडु की पारंपरिक शिल्पकला”

**13.7.98**

“सी वीड्स”

“बुनियादी शिक्षा”

**14.7.98**

“महेशम-1”

“पलाश”

### **Beware Fake Varsities**

The University Grants Commission (UGC) is reported to have identified 18 “self-styled” universities in the country. These include Maithili University, Darbhanga; Mahila Gram Vidyapith (Women’s Univeristy), Prayag; Varanaseya Sanskrit Viswavidyalaya, Varanasi, Delhi; Commercial University Ltd, Delhi; Indian Education Council of U.P., Lucknow; Gandhi Hindi Vidyapith, Prayag; National University of Electro Complex Homeopathy, Kanpur; Netaji Subhash Chandra Bose University (Open University), Achaltal, Aligarh; D.D.B. Sanskrit University, Putur, Trichi; Bharatiya Shiksha Parishad Open Vishwa-vidyalaya, Lucknow; St. John’s University, Kishanattam, Kerala; National University, Nagpur; United Nations University, Delhi; Vocational University, Delhi; Uttar Pradesh Vishwavidyalaya, Mathura; Maharana Pratap Shiksha Niketan Vishwa-vidyalaya, Pratapgarh; Raja Arabic University, Nagpur; Urdu University, Motia Park, Bhopal.

The Commission has advised students not to pursue higher education courses in these institutions, which are apparently functioning in contravention of the provisions of the UGC Act.

Section 22 of the UGC Act gives the right to confer a degree only to a university established or

incorporated by or under a Central Act, Provincial Act or a State Act.

Degrees can also be given in case an institution is deemed to be a University under Section 2 of the UGC Act. Section 23 of the Act says that no institution, whether a corporate body or not, other than university/*vishwavidyalaya* established by law, can associate the terms university or *vishwa-vidyalaya* with its name in any manner whatsoever.

Accordingly, institutions registered under the Societies Registration Act, 1860, can neither use the word university/*vishwa-vidyalaya* with their name nor have the right to grant a degree.

The degrees, diplomas and certificates awarded by the “fake” universities are not treated as valid for academic or employment purposes. Students have been advised to get in touch with the UGC office if they have any query about these institutions.

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## **News from AICTE**

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### **AICTE Seeks Membership of ‘Washington Accord’**

The All India Council for Technical Education (AICTE) is reportedly in the process of becoming a member of “Washington Accord”, a world body with a membership of about 30 advanced countries, which enables its members to give recognition to the degrees and diplomas awarded by the member countries on a reciprocal basis. According to AICTE chairman Prof. S. Rame Gowda there has been an enormous expansion of technical institutions in the country particularly in terms of engineering colleges and management institutions. Unfortunately, some of the management of these new institutions have not been able to attain even the minimum norms and standards prescribed by AICTE as agreed to at the time of approval. This has resulted in dilution of quality of technical education in the country. To restore the credibility of Indian institutions in tune with the best institutions in the world, AICTE has taken up on a war footing, the process of accreditation through establishment of a National Board of Accredita-

tion (NBA) for auditing the academic credentials of these institutions. A beginning has been made in this direction and over the past year, several engineering degree-level programmes have been assessed for accreditation.

Already around 400 courses in different engineering colleges and universities have been accredited and it is hoped that almost all the institutions, which have been in existence for more than five-years would take advantage of this AICTE initiative and get themselves accredited, he said

Prof. Rame Gowda said that Union Minister for Human Resources Development Dr Murli Manohar Joshi would inaugurate the three-day International Seminar on Accreditation “ACCSEM ‘98” which will be held at the Indian Institute of Science, Bangalore. It is being organised by AICTE in collaboration with Bangalore University, IISc, Bangalore and Indian Institute of Technology, Chennai. About twenty invited papers will be pre-

sented over six sessions. Each session will include a discussion slot. A session will also be devoted to panel discussion on issues concerning "Accreditation."

Eminent experts in the field of accreditation/higher technical education, at several universities of the UK, USA, France and Germany are expected to bring together a large number of experts and administrators of technical education on to a common discussion platform, in an attempt to evolve a feasible and universally acceptable accreditation system for ensuring and promoting quality education in the country. More than 400 delegates from India and abroad are expected to participate in the seminar.

He also said there was a need for better interaction between technical institutions and industry. This would have a great bearing on the engineering curriculum, exposure of students to industrial atmosphere and subsequent placement of young graduating engineers in industries across the country. With the advent of globalisation and opening up of Indian economy to outside world, competition among industries had become stiff. There was an urgent need to prepare engineering students for jobs in multinational companies, by exposing them to newer technologies and engineering methodologies. These could be achieved by bridging the gap between Industry and the academic institutions. Prof. Gowda hoped that more industries would participate in the seminar.

### **Development of Management Courses in Non-University Sectors**

The Eighth Plan document emphasized consolidation and optimum utilization of existing infrastructure. The Council, by taking

a pro-active role, initiated a Scheme, "Development of Management Courses in Non-University Sector" with the aim of covering areas showing consistently higher demand in manpower. The Scheme caters the well established institutions of proven record. Under the Scheme, the Council provides monetary incentives for the good performance of such institu-

tions and to develop competitiveness among them so as to perform better and achieve excellence. The assistance is provided on one time-basis and the institutions are required to utilize the amount of assistance within one year of its release. The assistance is available for augmentation of facilities such as computers, audio-visual equipment, books and journals.

## **News from Abroad**

### **TWAS Associateship Scheme**

In 1994, the Third World Academy of Sciences instituted a joint Associateship Scheme in collaboration with several Centres of Excellence in the South to enable active researchers from the South to visit these centres regularly. Currently over sixty Centres are participating in this scheme.

The aim of the scheme is to counteract the brain drain by alle-

viating the problem of isolation of talented scientists in developing countries, and strengthen the research programmes of Centres of Excellence in the South.

Within this scheme, a number of associates will be selected for each of the collaborating Centres from among the most eminent and promising researchers in developing countries, working in the fields

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of interest of each centre. The selection will be highly competitive and the appointment will be made on the basis of merit. Special consideration will be given to scientists from isolated institutions in developing countries.

The appointment will be made for a fixed period of three years, during which the associate is entitled to visit the Centre twice for a period of two to three months each time. Subject to the availability of funds, the appointment may be renewed for a further term of three years. During the visit the associate may pursue his/her own research interests and/or collaborate with the research teams at the Centre in programmes of common interest.

The Third World Academy of Sciences, with a grant provided for this scheme by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Dipartimento per la Cooperazione allo Sviluppo of the Italian Ministry of Foreign Affairs will cover the travel expenses involved, while the host centre will cover the living expenses of the visitors, and provide all the necessary research facilities.

Associates of the (ICTP) are not eligible for these appointments.

Applications for the Associateship Scheme should reach the TWAS Secretariat by 1 December 1998 at the following address : Ms. Helen Grant, Associateship Scheme, Third World Academy of Sciences (TWAS), C/o The Abdus Salam International Centre for Theoretical Physics (ICTP) P.O. Box 586 — Strada Costiera 11 — 34100 Trieste — Italy, Phone : (+39-40) 2240387 — Fax : (+39-40) 224559, Telex : 460392 ICTP I — E-Mail : [twas@ictp.trieste.it](mailto:twas@ictp.trieste.it)



## Indira Gandhi National Open University

Schedule of Telecast for the period 1st to 31st July, 1998  
6.30 a.m. to 7.00 a.m.

Day/Date	Academic Prog.	Title
1.7.98 Wednesday	Diploma & Certificate Course	Understanding the Problem of Slow Learner
2.7.98 Thursday	Diploma & Certificate Course	Creative Writing — An Introduction
3.7.98 Friday	Management	Marketing Management & Planning
6.7.98 Monday	Bachelor's Degree Programme	Curves
7.7.98 Tuesday	Bachelor's Degree Programme	Aiye Khel Samagri Banayen Pt. I
8.7.98 Wednesday	Diploma & Certificate Course	Dramatisation of Ideas
9.7.98 Thursday	Diploma & Certificate Course	Travel Writing
10.7.98 Friday	Management	Globalization of Indian Business
13.7.98 Monday	Bachelor's Degree Programme	Wakron Ki Jyanti
14.7.98 Tuesday	Bachelor's Degree Programme	Aiye Khel Samagri Banayen Pt. II
15.7.98 Wednesday	Diploma & Certificate Course	Writing for Children
16.7.98 Thursday	Diploma & Certificate Course	A Profile of a Creative Writer
17.7.98 Friday	Management	Corporate Planning
20.7.98 Monday	Bachelor's Degree Programme	Aiye Khel Samagri Banayen Pt. III
21.7.98 Tuesday	Bachelor's Degree Programme	Aiye Khel Samagri Banayen Pt. IV
22.7.98 Wednesday	Diploma & Certificate Course	Expression in Creativity
23.7.98 Thursday	Diploma & Certificate Course	Writing TV Ads
24.7.98 Friday	Management	Technology Acquisition — Indian Experience
27.7.98 Monday	Bachelor's Degree Programme	Kahani Kaise Sunayen Pt. I
28.7.98 Tuesday	Bachelor's Degree Programme	Kahani Kaise Sunayen Pt. II
29.7.98 Wednesday	Diploma & Certificate Course	Script Writing for Moving Image
30.7.98 Thursday	Diploma & Certificate Course	Theme in Poetry
31.7.98 Friday	Management	Framework for Strategic Alliances

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## BOOK REVIEW

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### The Great Debate

Mamota Das\*

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**D. Swamiraj. Higher Education in India. Tiruchirappalli, Esses Publishers, Pp. 168, Rs. 150/-.**

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The publication of this book comes at an opportune time as we usher in the twenty-first century. Nations across the world are deeply concerned of what the future portends for them. This is reflected in the seminars and conferences, as each nation strategies on how to face the untested waters of the next millennium. Quality and equity in education are some of the critical issues, featuring in such fora. Swamiraj's contribution to this great debate is undoubtedly of immense value

The author's solid academic background and unchequered professional involvement with India's higher education as a teacher, researcher and a life time academic administrator places him well in presentation of the vision of higher education, a feat accomplished in this volume.

The book is organised around four broad themes which form the four major sections. The themes are : Third World Higher Education, Higher Education in India, Christian Educational Endeavour, and finally, the Future Scenario. Some of the issues han-

dled under these broad themes include Higher Education Reform in India, Higher Education in the third world countries, Observations on United States Higher Education system vis-a-vis Indian Higher Education, Management and administration of private colleges, Recruitment, Development and Accountability of Teachers, the Role of Christian Educational Institutions in India and some key issues regarding the future of higher education. These are pertinent issues in any genuine effort to improve the quality of education

The book commences with a perspective of higher education in the third world countries, which mainly focuses and stresses the development objective of those education systems. An observation is made on the elitist nature of their higher education and their origin traced to both historical and philosophical factors that have influenced those common features. The danger of stressing on immediate needs like achieving national development through higher education is highlighted.

In discussing the growth and expansion of higher education, at times conflicting roles of the main stakeholders such as the government, private sector and lately 'self financing institutions' are vividly captured. His sugges-

tion of leaving day-to-day administration to university authorities is very timely.

The prominent contribution of christian missions to education has been acknowledged. However, the practice of selecting only christians for staff positions, as the author observes, does not auger well. Credible criteria for recruitment should be laid down and adhered to.

This volume is not an exhaustive resource material on all or most of the issues discussed. It nevertheless succeeds in rendering an adequate overview of the issues raised

In his perspective of phenomenal growth of higher education in India since independence the author points out the likely situation of the current infrastructure being unable to accommodate the needs and challenges of even the first two decades of 21st century.

He suggests that the expansion should be consolidated and the way forward should be marked by emphasis on quality and installation of mechanism of quality control.

This volume of essays will be of great interest to educational practitioners, policy makers, students as well as those involved in directing higher education in this country.

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\*Professor and Head, Department of Education, and Dean, Faculty of Education, Annamalai University, Annamalai Nagar-608 002, Tamilnadu (India)

# COMMUNICATION

## Improving the Refresher Courses

S.B. Advant's suggestions on UGC sponsored Refresher Courses (RCs) *University News*, Vol. 36 No. 14 are welcome. Of the 27 point suggestions, a few are already incorporated in Refresher Courses conducted by some of the Academic Staff Colleges (ASCs). I attended one Refresher Course, conducted by the ASC, Burdwan University, West Bengal, where group discussion, mentioned in serial 3, and seminars, mentioned in serial 4, were part of the Course. And undoubtedly these add to the interest of the Course and 'increase interaction among the participants'.

As regards the very first suggestion, I personally feel that it may not be possible for all the ASCs. For example, in Burdwan University, West Bengal, throughout the summer vacation different University examinations are held and teachers remain engaged in various examination related duties. Of course if RCs are organized during vacations then the students of Undergraduate and Postgraduate Colleges do not suffer due to non-availability of teachers participating in RCs.

The second part of the suggestion offered in serial 6 deserves special attention by the ASCs. As a participant I also felt that most of the RCs do not pay much attention to 'discussion on syllabus, syllabus reforms, restructuring of courses' etc. Such discussions in RCs may help universities formulate balanced syllabi for different disciplines keeping the practical aspects in view. I think RCs are the most appropriate fora where such discussions should take place.

To save RCs from being mo-

notonous (mentioned in serial-14) ASCs may organize film shows,

sight seeing tours for the participants. And where the UGC is the sponsor, do ASCs have to bother for funds?

G.B. Sural  
Senior Lecturer,  
Department of English,  
Bankura Christian College,  
Bankura.



### POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION & RESEARCH, CHANDIGARH

#### ADMISSION NOTICE NO. 49/98 (Acad.)

LAST DATE FOR RECEIPT OF APPLICATION FORMS : 27.7.98

Applications on prescribed form are invited for the following para medical courses starting from 1st September, 1998.

**INCOMPLETE APPLICATIONS WILL NOT BE ENTERTAINED.**

Sr. No.	Name of the course	Total Seats	Gen.	SC/ST	Stipend admissible
1.	B.Sc. Medical Technology (Laboratory)	15	11	4	Rs.150/- p.m. for 1st year and Rs.200/- p.m. for 2nd and 3rd years.
2	B.Sc. Medical Technology (X-ray)	10	8	2	-do-
3	B.Sc. (Audiology & Speech Therapy)	6	4	2	-do-
4	B.Sc. Medical Technology (Radio-therapy)	5	5	-	No Stipend admissible
The course at Sr. No. 4 is restricted to Sponsored/Deputed candidates. Duration of above courses is three academic years.					
5	B.Sc. Physical Therapies (B Ph.T)	10	8	2	Rs.150/- p.m. for 1st year and Rs.200/- p.m. for 2nd, 3rd and 4th years.
Duration of above course is four and half academic years.					
6	Operation Theatre Assistant course	10	8	2	Rs.150/- p.m.
Duration of course is one academic year					

- The number of seats mentioned above is subject to variation without prior notice.
- Age Limit not more than 25 years and less than 17 years on 1st September, 1998 (i.e. those born after 1st September, 1981 and before 1st September, 1973 are not eligible).
- Application form and detailed information containing eligibility qualifications, age limit etc. are available from the office of the undersigned either in person on payment of Rs.150/- at the counter from 10.30 A.M. to 11.30 A.M. and 2.30 P.M. to 3.30 P.M. on all working days except Saturdays (on Saturdays forms will be available from 10.30 A.M. to 11.30 A.M.) or by post on written request accompanied with a self addressed envelope of 23 cms x 10 cms with postage stamps of Rs.10/- affixed thereon and crossed postal order/ bank draft for Rs.150/- drawn in favour of the Director of the Institute.

#### Note :

No request for the supply of form by post will be entertained after 23.7.1998.

(J.D.W.G.)  
Officer Incharge  
(Academic Section)

# THESES OF THE MONTH

## A list of doctoral theses accepted by Indian Universities

### HUMANITIES

#### Fine Arts

#### Music

1 Vishwaroop, Himanshu Vishnu. *Gwalior ke vadan paramparayen tatha unke vadanacharya : Sarod, sarangi, tabla pakhavaj ke visheesh sandarbh mein.* (Dr Arun Bangre) Department of Music, Nagpur University, Nagpur.

#### Geography

1. Arora, Poonam *Chambal Sambhag ka shasya pratirup : Chambal ayakat ke adhyayan sahit.* (Dr Bhagwan Sahai) Department of Geography, Jiwaji University, Gwalior.

2. Dalbir Singh *A study on evolution and spatial analysis of rural settlements in Hissar District, Haryana.* (Dr S H Ansari), Department of Geography, Maharshi Dayanand University, Rohtak

3 Jayashree, P *Spatial analysis of agro-based industries : A case study of Mandya District.* (Dr Krishna Murthy) Department of Geography, University of Mysore, Mysore

4. Rajinder *Spatial organisation of educational facilities and strategy for planning in Rohtak District* (Dr S H Ansari) Department of Geography, Maharshi Dayanand University, Rohtak

#### History

1 Anjaiah, S *The emergence and role of middle classes in the princely states : A study of Hyderabad State* (Dr A Satyanarayana) Department of History, Osmania University, Hyderabad

2 Barthakur, Achyut Kumar. *Judicial administration in Assam, 1826-1874.* (Prof S L Baruah). Department of History, Dibrugarh University, Dibrugarh

3 Bokatial, Bhadreswar *Development of court literature in Assam under the Ahoms.* (Prof D Nath). Department of History, Dibrugarh University, Dibrugarh.

4 Cutinha, Ronald *Socio-economic study of the Kaifiyats of South and North Kanara districts in historical perspectives.* (Dr K S Shivanna) Department of History, University of Mysore, Mysore

5 Jangam, Upendra Narayan *Freedom movement in Solapur District from 1885-1947.* (Dr B N Sardesai). Department of History, Shivaji University, Kolhapur.

6 Kadam, Sanjeevani Babasaheb *Life and work of Karmveer Dadasaheb Gaikwad.* (Dr B D Khane) Department of History, Shivaji University, Kolhapur.

7 Mishra, Sandhya. *Chhattisgarh mein Vyaktigat Andolan : Ek aitihasik anuashleen.* (Dr Mamta Garg) Department of History, Guru Ghasidas University, Bilaspur

8 Mitra, Subodhkumar K. *Pitalkhora : Art and archaeology.* (Dr T V Pathy). Department of History, Dr Babasaheb Ambedkar Marathwada University, Aurangabad

9 Narwana, Phool Singh *1857 ke andolan mein Ramgarh ke Rani Awantibai ka yogdan.* (Dr P S Lodhu) Department of History, Jiwaji University, Gwalior.

10 Nidoni, Dhulappa Ramgonda. *History of Jamkhandi State.* (Dr B D Khane) Department of History, Shivaji University, Kolhapur.

11 Rahman Hazarika, Nashreen *Social and cultural changes among the Muslims of the Brahmaputra Valley, 1874-1947.* (Prof M L Bose). Department of History, Dibrugarh University, Dibrugarh.

12 Sadanand, K. *Printing in the Telangana part of the state of Hyderabad till 1948.* (Dr M Radhakrishna Sarma) Department of Ancient Indian History, Culture and Archaeology, Osmania University, Hyderabad

#### Language & Literature

#### English

1. Batra, Aparna *Strategies of survival in post-war American fiction* (Dr C M Sharma), Department of English, Maharshi Dayanand University, Rohtak.

2 Biswas, Santanu *The predicament of instability . The mechanism of metaphor and Metonymy in Christopher Marlowe's 1564-93: The tragical historie of Doctor Faustus, 1604.* (Prof H S Gill) Centre of Linguistics and English, Jawaharlal Nehru University, New Delhi

3 Joseph, Joseph Koyippally *Existential transformation as signifier in the tempest : A study of signification in conceptual structures.* (Prof H S Gill) Centre of Linguistics and English, Jawaharlal Nehru University, New Delhi

4 Nalini, M.K. *Feminist awareness in the works of Rebecca Harding Davis, Kate Chopin and Charlotte Perkins Gilman.* (Dr D A Shankar). Department of English, University of Mysore, Mysore.

5 Prabhakar, M. *Feminist perspective in Margaret Atwood's works.* (Prof P Mallikarjuna Rao) Department of English, Kakatiya University, Warangal

6 Roy, Ranendra Narayan. *Rabindranath Tagore : The novelist.* D Litt Department of English, Nagpur University, Nagpur

7 Sathyavathi, K *Theme of alienation in the novels of Joseph Conrad.* (Dr T Asoka Rani). Department of English, Sri Padmavati Mahila Visvavidyalayam, Tirupati

8 Shravan Kumar, G *Patterns of reform and rationalization in the essays of the Spectator and the Sakshi . A comparative study.* (Dr A Subba Rao) Department of English, Osmania University, Hyderabad.

#### Hindi

1 Bolisetty, Lakshminarayana *Naven dashak ka kahani sahitya : Ek vishleshan.* (Dr Malti Tandon) Department of Hindi, University of Mysore, Mysore

2 Dubey, Akhilesh Kumar. *Satrahavin shatabdi ke purvardha mein Banarasi Das Jain ke 'Ardhakathanak' ka samajik sanskritik paridrishya.* (Prof Savitri Chandra). Centre of Indian Languages, Jawaharlal Nehru University, New Delhi.

3 Kapoor, Monika. *Sagun kavya dhara mein tatvanveshan.* (Dr B N Singhal), Department of Hindi, Maharshi Dayanand University, Rohtak.

4 Mohammad Ahsan. *Problem of women in the fiction writings of Ismat Chughtayee and Krishna Sobti : A comparative study.* (Dr Aslam Parvez) Centre of Indian Languages, Jawaharlal Nehru University, New Delhi.

5 Nisha. *Sathottar Hindi kavya mein pauranik punarakhyan : Boddh aur Vyanjana ke nikash per.* (Dr S V S Verma), Department of Hindi, Maharshi Dayanand University,



## Rohtak

6. Patil, Shailaja Ramrao. *Yashpal ke upanyason mein abhivyakt pragatisheelata*. (Dr V K Ghatge). Department of Hindi, Shivaji University, Kolhapur

7. Sawant, Satappa Shamrao. *Bhadant Anand Kausalyayan ke sahitya ka anusheelan*. (Dr Shashuprabha Jain). Department of Hindi, Shivaji University, Kolhapur

## Kannada

1. Savadatti, Bharati Tammanna. *Kannada sahityadalli Bahubali*. (Dr S P Patil). Department of Kannada, Karnatak University, Dharwad.

## Marathi

1. Gurmaji, Jadhao Shatrughna. *Dalit sahitya sameeksha : Ek chikitsak abhyas*. (Dr Sudam Jadhav). Department of Marathi, Dr Babasaheb Ambedkar Marathwada University, Aurangabad

2. Joshi, Supriya Rajeev. *Marathiteel mahanagariya kadambri, 1960-1985*. (Dr Rohini Tukdeo). Department of Marathi, Shivaji University, Kolhapur.

3. Pawar, Chhaya Vilas. *Marathi navkathentranchi Nagarkatha*. (Dr V K Shinde). Department of Marathi, Shivaji University, Kolhapur.

4. Wadkar, Vijaya Mahadeo. *Maharshi Vittal Ram Jee Shinde yanche lalit swaroopache lekhan : Sarvageen abhyas*. (Dr G M Pawar). Department of Marathi, Shivaji University, Kolhapur.

## Sanskrit

1. Das, Prabir Kumar. *Economic aspects of Sanskrit literature : A study*. (Dr Sitanath Dey). Department of Sanskrit, Tripura University, Agartala

2. Rana, Arvind. *Panini's treatment of tadhitaa and an examination of its commutability with computer programming*. (Dr Yajan Veer Dahiya). Department of Sanskrit, Maharshi Dayanand University, Rohtak

3. Sunita Ranu. *Mahakavi Kalidasa viracita Meghadoota evam Vasanta Triyambaka Sevade viracit Abhinava Meghadoota ka tulanatmaka adhyayana*. Department of Sanskrit, Kurukshetra University, Kurukshetra.

4. Vasudeva, H R. *Sanskrita chitra kavya parampare : Ondu sa vimarshe adhyayana*. (Dr B Channakeshava). Department of Sanskrit, University of Mysore, Mysore.

## Tamil

1. Umarani, P. *A model for computer analysis of Tamil sentences*. (Dr K S Rajyashree). Department of Linguistics, University of Mysore, Mysore.

## Telugu

1. Bharani, M. *A critical study of the Village Gods of twincities*. Department of Telugu Literature, Potti Sreeramulu Telugu University, Hyderabad

2. Padma Kumari, M. *Ranganatha Ekoji Ramayanamulu : Tulanatmaka pariseelanamu*. (Prof N Gopal). Department of Telugu, Osmania University, Hyderabad.

3. Veerappaiah, K. *Ravi Shastri rachanalu samagra pariseelana*. (Dr M Sujatha Reddy). Department of Telugu, Osmania University, Hyderabad.

4. Venkateswara Rao, Boyina. *A critical study of a decade's experiments in modern Telugu Literature*. Department of Telugu Literature, Potti Sreeramulu Telugu University, Hyderabad.

## Urdu

1. Azad, Md Tufail. *Zadeed Urdu shairi mein manazir-e-fitrat kee akkasi : Anjuman-e-Punjab ke qayaam se 1950 tak*. (Dr Aslam Parvez). Centre of Indian Languages, Jawaharlal Nehru University, New Delhi

2. Hayat, Mohd Azhar. *Maulawi Nazeer Ahmad ke novelon mein unke talimi tasawwur ka tahqueeq aur tanqueedi mutala*. (Dr Abdur Rab Irfan). Department of Urdu, Nagpur University, Nagpur.

3. Mashuruzzaman. *Maulana Anwarul Haque Nazish : As a prose writer*. Department of Urdu, Magadh University, Bodh Gaya

4. Mohd Zahiruddin. *Study of the psychology of woman folk in Urdu literature*. (Dr M R Khan). Department of Urdu and Persian, Nagpur University, Nagpur

## Philosophy

1. Dutta Roy, Sudipta. *A comparative and critical study of the epistemological and ontological doctrines of John Locke and David Hume*. (Prof Suman Gupta). Department of Philosophy, Jawaharlal Nehru University, New Delhi

2. Veerappa, G. *The philosophy of Mahatma Gandhi and its relevance to the modern times*. (Dr T Christanandam). Department of Philosophy, Andhra University, Waltair

# Calendar of Events

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary / Officer to be contacted
Nov. 9-10 1998	National Conference of Society for Biomaterials & Artificial Organs	Theme : New Frontiers in Biomedical Materials and Devices	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram	Dr M. Jayabalan, Org. Secretary, NCSBAO-98, Polymer Div., Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram-695 012
Dec 1-4 1998	Fourth International Symposium on Genetics, Health & Disease	Theme : Frontiers of Human Genetics in 21st Century	Guru Nanak Dev University, Amritsar	Prof Dr Jai Rup Singh, Centre of Genetic Disorders, Department of Human Genetics, Guru Nanak Dev University, Amritsar-143 005

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# EDUCATION NEWS INDEX

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A list of select articles and editorials on education from newspapers received in the  
AIU Library during May 1998

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Dayananda, N. Human values cannot be given the go-by. The Hindu 19.5.98.

## EDUCATIONAL PSYCHOLOGY

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Bashuruddin, S. Equipping students to know Deccan Chronicle 3.5.98

Chaudhury, Shoma. Ringside learning in the school circus. The Pioneer 7.5.98.

Ganguly, Shonali. Are you afraid of maths? The Telegraph 18.5.98.

Hathu, Daksha. 'I learnt calmness'. Deccan Herald 3.5.98.

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Kavitha, K. Why dreams die. Deccan Herald 3.5.98

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Ramadas, M. Community college catering to the society. The Hindu 30.5.98.

## EDUCATIONAL POLICY & PLANNING

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Amrik Singh. UGC as an instrument of policy. The Hindu 14.5.98.

Beuria, S T Orissa - Probe ordered into university lapses Deccan Herald 1.5.98

Choudhury, Akhil. Reintroduce educational fee The Assam Tribune 29.5.98

Dayal, P P. Don't hire and fire VCs The Pioneer 30.5.98.

Joseph, Vidya Maria. Not drops in the ocean. Deccan Herald 3.5.98.

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#### EDUCATIONAL TECHNOLOGY

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#### EDUCATIONAL EVALUATION

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Chamaraj, Kathayayini. Making them learn. *The Hindu* 10.5.98.

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#### COMPARATIVE EDUCATION & AREA STUDIES

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#### BIOGRAPHICAL PROFILE

Abhumanyu. Doyen of DAV movement : Darbari Lal. *The Tribune* 15.5.98.



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3	Director (Rs 4500-7300)	01	Dr Z H I I S
4	Head of Section (Rs 3700-5700)	02	One each in Electronics and Humanities & Applied Sciences, University Polytechnic
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96) Professor in Environmental Engineering, (3/96-97 & 10/97-98), Reader in Mathematics (Applied Scs & Humanities) (3/96-97), Reader, Research Associate (6/96-97) & Director in the Dr Z H I I S (3/97-98), Head of Section (Electronics) in University Polytechnic (10/97-98), Lecturers in Education (Economics/Commerce/Physics) (10/97-98) in Deptt of IASE, Lecturer in Psychology (5/96-97) and Director in Nursery School (5/97-98, 10/97-98) need not apply again They may however submit the additional information on the prescribed proforma by the last date

- The post of Professor in Environmental Engg and Research Associate shall be filled till the scheme lasts
- T A will be paid to SC/ST candidates called for attending the interview as per rule

The prescribed application forms together with the detailed information/qualifications can be had from the Asstt Registrar (Recruitment), Registrar Office, Jamia Millia Islamia, Jamia Nagar, New Delhi-110 025 during working days either personally or by sending a self addressed stamped envelope worth Rs 4/- (ordinary post) and Rs 12/- (registered post) with the payment of Rs 50/- (Rs 20/- for SC/ST) The amount should be paid in cash on counter or through I P O/DD, drawn in favour of Jamia Millia Islamia

Prof. Anisur Rehman  
Dated : 25/06/1998 OFFTG. REGISTRAR

H.N.B. Garhwal University,  
Srinagar (Garhwal) U.P.

Advertisement No. 22/98

Applications for the following posts are invited (through proper channel from those in employment) by registered post on prescribed form obtainable from the office of the Registrar either by sending application-fee of Rs 100/- (one hundred only) (Rs 50/- for Schedule Caste Candidates) in the form of Demand Draft in favour of Finance Officer, H N B. Garhwal University, Srinagar (Garhwal) U P alongwith a self addressed envelope of 23 cm x 10 cm with stamps of Rs 20/- (twenty only) affixed on it as postal charges or personally by depositing the application-fee on the Cash-counter of the University. Application form alongwith attested testimonials should reach

the Registrar on or before 25.7.98. Applications received after the closing date will not be entertained in any case, even on account of postal delay.

#### Lecturer cum Research Officer - 01

##### Qualifications :

- 1 As per-UGC norms for Lecturership
- 2 Desirable : Master's Degree in Forestry or Botany with specialization in Social Forestry and having working experience with women-folk of Garhwal Himalaya

**Project Officer-01** (for Schedule Caste candidates, Department of Adult Continuing Education and Extension)

##### Qualifications :

- 1 Good academic record in Social Sciences/Social work/Humanities/Education/Sciences/Home Science/Adult/Continuing/Extension Education/Community Development
- 2 Post-Graduate diploma in Adult and Continuing Education from a recognised

Indian University or equivalent diploma/degree from a foreign University

3 Other Qualifications are as per UGC norms for Lecturership

Desirable : Experience of field work/teaching or research in Adult/Continuing/Extension/Community/Non-formal Education/Community Development of two years

### ANNA UNIVERSITY

CHENNAI-600 025

Advt. No. 001/PR 14/AVRC/Rec/98

Dated : 17.06.1998

Applications are invited for the following posts in Audio Visual Research Centre, Anna University, Chennai-600 025 in the pay scale shown against each post plus allowances as admissible

Name of the post	Pre-revised Pay scale in Rs	Number of Post
1 Director	4500-7300	1
2 Producer	2200-4000	1

3 Engineer Grade I	2200-4000	1
4 Camera person	2000-3200	1
5. Graphic Artist	2000-3200	1
6 Production Assistant	1640-2900	1
7 Driver-cum-Helper	950-1500	1

The posts are purely temporary for the duration of the project ending on 31.3.2002. Candidates appointed against these posts shall have no claim/right whatsoever for absorption into the University service

The application form containing full details can be obtained from the Director, Audio Visual Research Centre, Anna University, Chennai-600 025 on payment of Rs 100/- through a Demand Draft dated not earlier than 19.06.98 drawn in favour of the "Registrar, Anna University, Chennai-600 025" together with a stamped (Rs 8/-) self addressed envelope of size 22 x 10 cm

The LAST DATE for the receipt of duly completed application is dated 24.07.1998.

REGISTRAR

## DEVI AHILYA VISHWAVIDYALAYA, INDORE UNIVERSITY CAMPUS, R.N.T. MARG, INDORE-452 001 (M.P.)

No. Estt. III(4)/98

Dated 20.6.98

### EMPLOYMENT NOTICE

Applications in the prescribed form obtainable from 25th June 1998 from the University Office on payment of Rs 30/- in person or Rs 50/- if desired by post by means of a crossed IPO/D D payable to The Registrar, D A V V, Indore are invited for the following posts in following Departments of D A V V, Indore, so as to reach the undersigned on or before 20.7.98 duly completed

S.No.	Name of the Deptt.	Name of the post & Number/ pay Scale	Reserved post for SC/ST/OBC	Open Category
1	A V R C (Audio Visual Research Centre)	Producer 2200-4000	2	1 (ST)
2		Engineer Gr I 2200-4000	1	—
3		Technical- Assistant 1640-2900	1	—
4		Technician 1200-2040	1	1 (ST)
5		Graphic Artist 2000-3200	1	—
6		Cameraman 2000-3200	1	1 (ST)
7	University Library	Asstt Librarian 2200-4000	1	—

Details of qualifications and other terms & conditions will be supplied with the application forms. ST/SC & OBC candidates are exempted from payment of Application fee only. However they have to pay application form fee.

REGISTRAR

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